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Mines statement

New Zealand. Mines Dept

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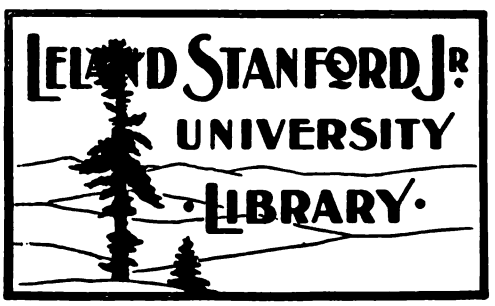

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NEW ZEALAND.

PAPERS AND REPORTS

RELATING TO

MINERALS AND MINING

COMPRISING

STATEMENT BY THE MINISTER OF MINES.

REPORT ON THE GOLDFIELDS.

REPORT ON COAL-MINES.

REPORT ON STATE COAL-MINES.

WELLINGTON
BY AUTHORITY: JOHN MACKAY, GOVERNMENT PRINTER.

1903.

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1903.

NEW ZEALAND.

MINES STATEMENT.

BY THE HON. JAMES McGOWAN, MINISTER OF MINES.

MR. SPEAKER,—

In presenting my annual Statement to Parliament it gives me much pleasure to be able to point to the continued growth of the mining industry of this colony, as evidenced by the returns of output and value. These show a decided increase—notably so in the case of the production of coal and of the precious metals. In comparison with the year 1901 the returns for last year show an advance in gross value of considerably over a quarter of a million pounds sterling.

It may be interesting at the outset to briefly review the progress of mining in New Zealand. In 1857 gold to the value of £40,422 was entered for exportation; in 1860 the value similarly entered was only £17,585. In 1861 an impetus was given to the industry by the discovery of alluvial gold in Otago, and gold to the value of £751,873 was obtained, the output being doubled in the following year. During 1863 the gold-export was £2,431,723, and for the following eight years the production was very large, the maximum being obtained in the year 1871, when it reached no less a sum than £2,787,520. From that time there was a general decline until 1890, when the value of gold entered for exportation was only £773,438, this being the lowest amount since 1861.

The year 1891 showed a decided advance, and for a further period of seven years the annual returns oscillated backwards and forwards, the approximate average production being of a value of about £900,000 per annum.

During the year 1899 an increase was experienced, the amount being returned at £1,513,173. This was followed by a falling-off in 1900 to the extent of £73,571 (a circumstance largely due to temporary suspensions for alterations in methods of treatment), but in 1901 a marked advance became again noticeable, the gold-production being returned at a value of £1,753,783. For last year (1902) a further increase is reported, and the value of gold produced was £1,951,433. An increase in the amount of silver produced has also taken place, and the total value of gold and silver produced for the year 1902 amounts to £2,023,408.

The production of coal and lignite may be reviewed for a period extending over a quarter of a century. In 1878 the tonnage returned was 162,218, and a gradual increase took place each year until the end of 1888, the returns for that year being 613,895 tons. In 1889 the output decreased to 586,445 tons, but during 1890 an increased output was produced, the returns showing 637,397 tons. Since that date the production has steadily increased, and in the year 1900 the returns showed that for the first time in the history of the colony the output had reached over a million tons. The production for last year (1902) was 1,365,040 tons.

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MINERAL PRODUCTION.

The annexed Table No. 1 shows the quantity of gold, silver, coal, and other minerals, including kauri-gum, produced during the year ending the 31st December, 1902. The total production of gold and silver was 1,182,241 oz., valued at £2,023,408, and shows an increase in value of £204,367 as compared with that of the preceding year.

The output of other minerals, including coal and lignite, has been 1,373,077 tons, representing a value of £1,198,214, being 124,913 tons in excess of the previous year. Kauri-gum to the amount of 7,430 tons, valued at £450,223, was obtained. Compared with the production of the previous year this shows a decrease of 111 tons, but an increase in value of £4,109.

The quantities and values of the chief mineral productions for the past two years are summarised for comparison as follow:—

Product.	Year ending 31st December, 1901. Quantity.	Value. £	Year ending 31st December, 1902. Quantity.	Value. £
Gold	455,561 oz.	1,753,783	508,045 oz.	1,951,433
Silver	571,134 "	65,258	674,196 "	71,975
Copper-ore	3 tons	105	...	...
Antimony	30 "	136	...	...
Manganese-ore	208 "	614	...	...
Mixed minerals	696 "	7,775	415 tons	4,422
Chrome-ore	...	...	175 "	525
Colonial coal exported, including that used by Home steamers	159,643 "	142,176	188,677 "	154,747
Hæmatite	...	...	17 "	116
Colonial coal consumed in New Zealand	1,067,995 "	533,998	1,174,025 "	587,012
Kauri-gum	7,541 "	446,114	7,430 "	450,223
Shale	12,048 "	6,024	2,338 "	1,169
Total value of production for 1902				£3,221,622
" " 1901				2,955,983
Total increase				£265,639

The total value of gold, silver, coal, and other minerals (including kauri-gum) produced up to the end of 1902 was £82,282,586.

During the first six months of this year a substantial increase in the value of gold and silver exported is shown by the following table of comparisons, which has been compiled from the returns of Customs:—

COMPARATIVE STATEMENT of GOLD and SILVER entered for EXPORT during the First Half of the Years 1902 and 1903.

	Half-year ending 30th June, 1902.		Half-year ending 30th June, 1903.		Increase for First Half of 1903.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Oz.	£	Oz.	£	Oz.	£
Gold	232,403	889,450	257,198	977,821	24,795	88,371
Silver	323,073	36,707	495,268	48,891	172,195	12,184
	555,476	926,157	752,466	1,026,712	196,990	100,555

GOLD EXPORT.

The quantity of gold entered for exportation through the Customs for the year 1902 was as follows:—Auckland, 201,583 oz.; Marlborough, 601 oz.; Nelson, 5,947 oz.; West Coast, 118,796 oz.; Canterbury, 2 oz.; Otago and Southland, 181,116 oz.

GOLD-MINING.

QUARTZ.

The working of gold-bearing quartz reefs continues to provide employment for a large number of men in both Islands, the principal centres and largest mines being in the Upper Thames portion of the North Island and in the locality of Reefton in the Middle Island.

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In the Hauraki Mining District, it is to be noted that extensive additions have been made to the plant of the Waihi Gold-mining Company, by which the crushing-power of the mills has been increased to 330 stamps. The dry-crushing process formerly adopted by this company has now given place to wet crushing, with results satisfactory to the owners and highly beneficial to the health of the men employed in the batteries. It may be remarked that the process of dry crushing has disappeared altogether from battery practice in New Zealand. Extensive bodies of ore have been proved at the Waihi Gold-mining Company's mines, which will afford a large output for many years to come, and work is now being undertaken for further development of the property at an increased depth.

None of the mines at Waihi, other than those owned by the Waihi Gold-mining Company, have yet reached a productive stage, but appearances favour the opinion that more determined efforts will be made to prove the continuation of the reef-system beyond the boundaries of the Waihi Gold-mining Company's holding.

The New Zealand Crown Mines at Karangahake rank second in importance, and satisfactory results were obtained for the year. Development-work has been largely in evidence at the neighbouring properties owned by the Talisman Consolidated (Limited) and the Woodstock Gold-mining Company. The latter company's operations have, however, been intermittent, and boring operations have been undertaken to further prove the property.

At Waitekauri results have been disappointing, owing to large bodies of calcite in the reefs, in some instances practically displacing the quartz.

Payable returns have been obtained from the Komata Reefs and from the Tairua Broken Hills Mine. Prospecting-work at Neavesville has also turned out well, and the mine is to be developed and a battery erected. At Waiorongomai satisfactory returns were obtained, and extensions to battery plant are under consideration.

Nothing new in the shape of developments can be reported at the Lower Thames. Boring operations by the Victoria Gold-mining Company have been suspended, but a public movement is now on foot to prove by a series of bores the existence or otherwise of gold-bearing reefs at a depth beyond that which has already been reached. The Government has agreed to contribute towards the cost of the undertaking, which is one of vital importance to the district.

The question of further ore-bodies existing at Thames is one which should be definitely settled, and within recent years the enlargement and deepening of the Queen of Beauty shaft was undertaken by the Thames-Hauraki Goldfields (Limited) with the object of exploring the ground at depth. In consideration of the company undertaking to sink this shaft to a depth of 2,000 ft. the Government paid a substantial subsidy towards the cost of a very powerful pumping plant, which was intended eventually to drain the other mines in the locality. Owing to financial difficulties the company was unable to continue its operations, and all work was stopped. To satisfy the demands of creditors the properties of the company were recently put up to auction by order of the Court, and purchased by the Government to prevent the machinery being sold piecemeal, and so retarding the development of deep-level mining, and probably causing its abandonment for many years to come. The shaft and plant are now available for use on such terms and conditions as may be considered most desirable to further the objects for which they were intended.

At Coromandel an impetus has been given to gold-mining by the discovery of highly payable ore at the Hauraki and Bunker's Hill Mines. Some of the mines (on which large sums of money have been spent) have closed down, but operations are being steadily prosecuted at the Royal Oak Mine and at several small properties adjacent to the town. It is to be regretted that the value of the ore at the Kauri Freehold Gold Estates Company's Mines at Opitonui, and also at the Mariposa and Kapai-Vermont joint properties at Kuaotunu, is too poor to admit of working otherwise than at a loss, and these mines have had to close down for the present. The Waitaia Mine, in the

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locality of Kuaotunu, has, however, been kept steadily at work, and there are indications that the scope of the company's operations will be extended. At Gumtown a small amount of work is going on, but the developments on this field up to the present are only on a small scale. Work on Great Barrier Island has been very limited.

Quartz-mining is only carried on in a very small way in the Marlborough District, operations being practically confined to the locality of Top Valley.

In the Nelson and West Coast Districts the mines at Taitapu are being developed more fully, with very good results. Sinking has been undertaken at Lyell, and it is hoped that payable ore will be obtained. This is the first attempt that has been made to prove the reef-system below adit-level, and the result will be watched with much interest. The mines in the vicinity of Reefton, which include the Progress Mines and those of the Consolidated Goldfields Company and the Keep-it-Dark Company, continue to yield good returns, and development-work appears to be kept well in advance of the demands of the mills. After spending a large sum in opening up the New Inkerman Mine in a comprehensive manner, the owners are about to commence treatment with fifteen stamps, concentrators, and cyanide plant, in order to test the quality of the ore on a commercial scale before putting down large reduction-works. It is expected that this, together with developments now in progress at reefs on the Paparoa Range, will materially assist in augmenting the yield from quartz-mining on the West Coast.

The value of gold won from quartz-mining in the Southern District shows an increase as compared with the previous year. The Achilles Mine, at Bullendale, and the O.P.Q. Mine, at Waipori, have not been worked during the year, and operations have ceased for the time being at the Cromwell Mine, Bendigo. Quite a number of small properties are being worked in the locality of Nenthorn and Macrae's; and some payable returns have been obtained at Barewood, where properties were taken up by Home syndicates and abandoned without being fairly tested. Increased attention is being devoted to the reef-systems of Otago, especially near Skipper's Point and on the Carrick Range. It is understood that efforts are being made to form a strong company with the object of working several reefs in the neighbourhood of Macetown. Very little work is going on at Preservation Inlet.

Hydraulic and Alluvial Mining.

The work of winning free gold from alluvial deposits is practically confined to the Middle Island, although a little desultory digging is done at Stewart Island. Year by year the shallow and easily worked patches are becoming exhausted, and as the ground gets poorer and the overburden greater it is beyond the means of the individual digger to work claims so circumstanced with success. It is in such cases that hydraulic sluicing, and in many instances hydraulic elevating also, meets the demand, and under these conditions this method of mining is the most efficient and economical that can be adopted. Hydraulic mining has for several years past been conducted on a comprehensive scale, and, although in many cases there is ground which will take several years to work out, there is a probability that in some districts a falling-off is inevitable within the next decade. The water now used for mining purposes on some fields will be very valuable for irrigation in the future. This applies especially to Central Otago, where there are considerable areas of land which, with a plentiful water-supply, could be farmed to advantage.

The class of mining under notice continues to provide employment for a number of men in various parts of the Middle Island, the principal centres of operations being in the localities of Collingwood, Murchison, Westport, Grey Valley, Kumara, Hokitika, Ross, and Okarito on the West Coast; and Lawrence, Roxburgh, Alexandra, Matakanui, St. Bathan's, Naseby, Queenstown, Nokomai, Waikaia, and Orepuki in the south.

The siphons in connection with the Mountain Hut Water-race are now completed; this race will give additional life to the workings at Maerewhenua.

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A storage dam has also been constructed near Naseby. The two works just named were undertaken by the Government, reference to their object being made in my Statement of last year.

Dredge Mining.

The total number of dredges are returned to the 31st December last as follows: Working, 201; standing, 52; building, 23; under removal, 14; wrecked, 2: total, 292. This shows an increase of eighteen working dredges as compared with those actually employed at the end of 1901. The industry may be said to have fairly settled down after the excitement of the "boom" period of from two to four years ago, and steady returns can reasonably be expected from this branch of mining for a considerable time to come. In some instances dredges were placed on claims which were more suitable to the method of hydraulic mining, and have been superseded by the latter system. On the West Coast it was found that much stronger machinery was required to work the tight wash frequently met with than is necessary for the more free gravels of Otago, and the experience so gained should be of value in the design and construction of dredges intended for the West Coast District in the future.

The general design of dredges has been fairly well settled by experience, but improvements in the details of working-arrangements and in respect to the methods of saving fine gold continue to be made from time to time.

It is now necessary that the masters of dredges working on deep or swift-flowing streams should be the holders of certificates of service or competency. These certificates are issued by the Board of Examiners appointed under the provisions of "The Mining Act, 1898."

PROSPECTING.

The sum of £1,131 0s. 4d. was expended in subsidies for the year ending the 31st March, 1903, to prospecting associations and parties of miners actually engaged in prospecting.

THE CYANIDE PROCESS OF GOLD-EXTRACTION.

In 1897 the patent rights of this invention were purchased for New Zealand by the Government in order to place the process at the disposal of mine-owners in this colony. The results obtained from its adoption at quartz-mines have amply justified the action of the Government in this matter, and the amount of royalty received up to the 31st March, 1903, is £6,141, which is over three-fifths of the sum paid to acquire the rights for the colony.

WATERCOURSES FOR TAILINGS, ETC.

The sum of £3,215 has been paid during the year as compensation in respect to lands adjacent to five rivers and streams proclaimed as water-courses into which tailings and mining *débris* may be discharged. Channels for carrying off storm-water and tailings-water from the dredges working at Charlton Creek and Waimumu have also been put under construction.

SCHOOLS OF MINES.

During the past eighteen years the aggregate expenditure on schools of mines in the colony has been £36,114 11s. 5d. This amount includes the grants made to the Mining School in connection with the University of Otago at Dunedin.

The schools have proved of considerable value to a large number of students aspiring to become qualified to hold responsible positions in connection with mines and batteries.

COAL-MINING.

As already intimated, the returns from our coal-mines show a steady increase, the production for last year being 1,365,040 tons, or 125,354 tons in excess of the previous year's output.

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The increases for the several districts are as follows: Northern District, 16,961 tons; West Coast District, 84,281 tons; Southern District, 24,112 tons: total, 125,354 tons. The total production for the colony during last year for the various classes of coals is as follows:—

	Tons.
Bituminous and semi-bituminous coal	845,046
Pitch coal	25,245
Brown coal	427,172
Lignite	65,239
Oil-shale	2,338
Total	1,365,040

The gross recorded output of coal and lignite (including oil-shale) now exceeds seventeen millions of tons.

In the North Island the production for last year from the principal mines was as follows: Taupiri Coal-mines (Limited), 89,263 tons; Hikurangi Coal Company (Limited), 39,119 tons; Ngunguru Mine, 18,017 tons; and Kiripaka Mine, 14,138 tons.

The Middle Island is the chief source of the coal-output of the colony, the West Coast Mining District affording the supply of bituminous coal. Here the collieries of the Westport Coal Company (Limited) maintain their pre-eminence, and last year produced 520,086 tons. Brunner Colliery had an output of 116,714 tons, and Blackball Colliery 99,597 tons. The production at this latter place is limited to the capacity of the aerial tramway, by which the coal is transported to the railway; but when railway connection with the colliery is established there is every likelihood of an increased output.

In the southern part of the Middle Island the collieries at Kaitangata still hold first place in point of magnitude. The output for the year was 118,050 tons—the second largest in the colony—followed by Nightcaps Colliery with 39,934 tons; Allandale Colliery, 21,916 tons; Fortification Colliery, near Milton, 16,522 tons; Lovell's Flat Colliery, 15,662 tons; Saddle Hill Colliery, 11,955 tons; Jubilee Colliery, Fairfield, 11,587 tons; and Walton Park Colliery, Fairfield, 10,283 tons. A large number of small pits are worked for purely local requirements, with outputs varying from a settler's personal requirements to nearly 10,000 tons. The Shag Point Colliery, which for many years was one of the chief producers of coal in the South, has had very serious difficulties owing to an influx of water. The merchantable coal has also been practically exhausted, present operations being confined to the working of a limited area of coal above the water-level.

The output of oil-shale at Orepuki fell off very considerably during the year in consequence of suspension of operations at the oil-works.

The total number of mines returned as having been worked during the year is 180, employing 2,885 persons. Many of the pits are mere quarries, at which lignite is obtained for local use.

Boring-operations by the Greymouth Harbour Board, to prove the continuation of the Brunner coalfield in the direction of Greymouth, were referred to in my last Statement. I learn that in the first borehole at Dobson coal 4 ft. 9 in. in thickness was struck at a depth of 556 ft., and a second seam at 572 ft., which had a thickness of 12 ft. 6 in. A second borehole, 44 chains nearer Greymouth, and consequently further to the dip of the measures, struck coal at 1,140 ft. The seam was 2 ft. 6 in. thick, and is probably identical with the upper seam struck in the first borehole. Unfortunately the larger seam was not bored to, as loose material falling from the sides of the bore prevented further progress. A third borehole, 48 chains nearer Greymouth than the second hole, and still further to the dip of the measures, has been drilled to a depth of 2,165 ft. (the limit of the available boring-rods) without reaching the coal, but some crude petroleum and inflammable gas have come to the surface. These indications appear to point to coal below. Small pockets of petroleum sometimes occur above coal-seams at considerable depth.

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STATE COAL-MINES.

The preliminary works for the opening-up of the State collieries are being vigorously prosecuted both at Seddonville, near Westport, and at Point Elizabeth, near Greymouth. At the former place the main tunnel and surface haulage-road, together with an additional siding and necessary repairs to some of the plant formerly owned by the late Westport-Cardiff Coal Company (Limited), are approaching completion, and the work of opening-up in the coal will, it is anticipated, enable a supply (although small at first) to be forthcoming from the Seddonville Colliery probably within the next two months.

At Point Elizabeth Colliery the necessary tunnels are being driven to win the coal in different sections of the property, and the main seam, 16 ft. in thickness, has already been reached in No. 1 tunnel. The construction of haulage-roads, loading-bins, and other requirements are in progress. The railway to connect the colliery with the Port of Greymouth was partially constructed by the late lessees of the coal properties, and on the cancellation of the lease was purchased by the Government. It is now being completed under the charge of the Public Works Department. Further details as to these works will be found in the reports of the Manager of the State coal-mines.

ACCIDENTS IN MINES.

Sixteen fatalities occurred in connection with the various branches of mining-work conducted throughout New Zealand during the year ended the 31st December last, and are summarised as follows:—

Class of Mining.	Number of Persons employed.	Fatalities.	Rate per 1,000.
Gold-mining—			
Quartz-mines	3,807	2	0·51
Hydraulic and alluvial mines	7,591	3	1·58
Dredges		9	
Coal-mines	2,885	2	0·69
	14,283	16	1·12

In all cases these accidents were inquired into by the Department. It is found that by far the greater proportion of fatal accidents at dredges is in connection with boating and the oiling of machinery while in motion, being mainly the result of carelessness on the part of the men. Apart from this, the figures show that mining, and underground mining especially, is conducted on safe and careful lines, and presents a lower death-rate than many trades carried on in broad daylight, where the risks are generally admitted to be infinitely less. It is evident that great care is exercised by the management of mines. At the same time, it must not be forgotten that underground work has special dangers and risks, and that, owing to the ever-changing conditions which prevail in mining, accidents are liable to occur in even the best-regulated mines.

SULPHUR.

The exports of sulphur have fallen off during the past two years. For the year 1902 the returns show an export of only 100 tons, valued at £475.

KAURI-GUM.

The output of kauri-gum appears to be steadily diminishing in quantity but increasing considerably in value. The export returns for last year show 7,430 tons, valued at £450,223, as compared with an export of 7,541 tons, valued at £446,114, for the year 1901.

There appears some probability that the peaty and swampy ground of old kauri forests will be treated for the extraction of the gum and its constituent oils, with which the ground is more or less permeated.

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SCHEELITE.

Messrs. Donaldson, of Macrae's (Otago), continue to prepare this mineral for market. It is found associated with gold-bearing quartz, and separated at the battery by concentrating-tables. Scheelite is also found at the Top Valley, Marlborough, in association with quartz-reefs.

HÆMATITE PAINT.

This is manufactured at Thames and Parapara from ores found in these localities. There are no fresh developments to note.

GALENA.

An effort is being made to work the deposits near Te Aroha. The ore contains gold, silver, and copper, in addition to lead. A trial shipment has been sent to Australia for treatment at a smelting-works.

IRON.

Although the manufacture of iron has not yet been commenced in this colony, it is satisfactory to note that arrangements have been made which are likely to lead to the development of our iron-ore deposits at Parapara, and also the ironsands of Taranaki, it being intended to work both on a commercial scale. The manufacture of iron and steel from these ores will doubtless become an important industry.

ROCK PHOSPHATE.

The discovery of this material at Clarendon (Otago), which was referred to in my Statement of last year, has been followed up in a practical manner, and the working of the rock, together with its chemical treatment, has become a recognised industry.

Excellent results from the use of these phosphates have been reported, and as phosphate fertilisers are in demand, and large quantities imported into the colony, the working of these deposits will naturally become a matter of practical interest to the farming community.

PETROLEUM.

Boring is in progress at Kotuku, near Greymouth, but so far nothing of commercial importance has been met with.

OTHER MINERALS.

The attempt to mine antimony-ore at Alexandra (Otago) has been abandoned in the meantime, owing to the expense of getting the ore to a port.

Prospecting operations have been continued in connection with the cinnabar lode at Waitahuna Heights, but no ore has yet been sent away.

Copper-ore is not being worked at present, but inquires are being made as to the nature and extent of the deposits.

ROADS AND TRACKS.

The expenditure for the year on roads and tracks amounted to £51,690 5s. 4d., this being an increase of £4,117 1s. 1d. as compared with that of the preceding twelve months. The subsidies granted to local bodies amounted to £1,493 12s. 2d., and the sum of £50,196 13s. 2d. has been expended in direct grants for roads and tracks in mining districts. The total expenditure by the Department under this heading during the past twenty-one years amounts to £420,159 11s. and £151,455 10s. 11d. respectively.

GEOLOGICAL.

The work of the Government Geologist has included the collection of data which it is intended to incorporate in a projected work on "The Geology of New Zealand," and also of preparing for the press descriptions and illustrations of rock-specimens from the Hauraki Goldfields, which have been classified and reported on by Professor Sollas (Oxford), together with an account of the geology of the district from which the specimens referred to were obtained.

As the result of these labours a work on "The Petrology of the Hauraki Goldfields" will be published, which should prove valuable to students and the mining community.

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THE MINING BUREAU.

The publication of the *New Zealand Mines Record* has been continued since August, 1897, by the Secretary of the Mining Bureau. Valuable information in reference to improved mining processes and machinery is collected from the principal centres of mining activity in Great Britain, South Africa, the United States, and the Australian Commonwealth, and disseminated through the pages of the *Record*. This is a distinct advantage to those engaged in the industry in this colony; while the reports in reference to the metalliferous and coal deposits of New Zealand that appear from time to time are frequently copied into the mining journals and technical magazines in the countries referred to, and the varied mineral resources of the colony are thus brought into prominent notice.

DEPARTMENTAL.

Throughout the year the work of the Department has been efficiently carried out by the respective officers at the various centres. The inspection of mines is, I have reason to believe, faithfully carried out, and the visits of Inspectors are as frequent as is really necessary. Experience goes to prove that over-inspection on the part of Government officers is as much to be deprecated as under-inspection; and that where inspections are more frequent than circumstances demand there is a tendency on the part of some persons in charge of mining operations to endeavour to transfer their responsibilities to the Inspectors of Mines, and, through them, to the Government. This is a condition totally foreign to the objects for which inspection was instituted, and I would emphasize the fact that our mining legislation has given power to the men employed in mines to have independent inspections made by suitable persons on their behalf. By this means the interests of workers are amply safeguarded without unduly interfering with mine manangement and development.

CONCLUSION.

So far as present evidences go, there appears every prospect that the value of minerals produced during this year will exceed that of the period which has been reviewed in this Statement.

In regard to quartz-mining, the present position of several mines is such that good returns may be confidently expected, and there are indications that a considerable degree of permanence is assured. On the other hand, there are places where this class of mining is at present under a cloud, but it is to be hoped that prospecting-work may prove sufficiently encouraging to warrant developments on a large scale.

Hydraulic and alluvial mining keeps fairly steady, and is, I think, likely to continue so for some time yet, although, as already pointed out, it must not be forgotten that the shallow and easily worked ground which could be operated without the expenditure of much capital is gradually becoming exhausted. The method of gold-mining by means of dredges will continue for several years, and it is from dredge mining and the hydraulic methods that the output of alluvial gold will be obtained in the future.

The coal-mines of the colony are year by year showing an increase in their aggregate production, and, with the advance of population and the growth of other industries in our leading centres, the demands on the mines are likely to become greater, and the requirements will be increased if the negotiations for the manufacture of iron and steel in the colony are carried to a practical issue.

Other minerals, at present unworked, will, no doubt, yet contribute to the progress of New Zealand.

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No. 1.

TABLE showing the COMPARISON in QUANTITY and VALUE of GOLD entered for EXPORTATION, and also the QUANTITY and VALUE of other MINERALS produced, for the Years ended the 31st December, 1902 and 1901, as well as the TOTAL VALUE since January, 1853.

Name of Metal or Mineral.	For Year ending the 31st December, 1902.		For Year ending the 31st December, 1901.		Total from the 1st January, 1853, to the 31st December, 1902.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Precious metals—	Oz.	£	Oz.	£	Oz.	£
Gold	508,045	1,951,433	455,561	1,753,783	15,572,507	61,111,316
Silver	674,196	71,975	571,134	65,258	3,300,138	452,781
Total gold and silver	1,182,241	2,023,408	1,026,695	1,819,041	18,872,645	61,564,097
Mineral produce, including kauri-gum—	Tons.	£	Tons.	£	Tons.	£
Copper-ore	..	..	3	105	1,411½	18,068
Chrome-ore	175	525	..	..	5,869	38,002
Antimony-ore	..	..	30	136	3,643	52,598
Manganese-ore	..	..	208	614	19,011½	60,846
Hæmatite-ore	17	116	..	..	69½	342
Mixed minerals	415	4,422	696	7,775	22,248	115,113
Coal (New Zealand) exported	188,677	154,747	159,643	142,176	1,581,838	1,486,766
Coke exported	..	..	..	..	16,370	24,804
Coal, output of mines in colony (less exports)	1,174,025	587,012	1,067,995	533,998	15,561,372	7,688,569
Kauri-gum	7,430	450,223	7,541	446,114	236,722	11,226,168
Shale	2,338	1,169	12,048	6,024	14,386	7,193
Total quantity and value of minerals	1,373,077	1,198,214	1,248,164	1,136,942	17,462,940½	20,718,489
Value of gold and silver, as above	..	2,023,408	..	1,819,041	..	61,564,097
Total value of minerals produced, including gold and silver	..	3,221,622	..	2,955,983	..	82,282,586

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No. 2.

TABLE showing the QUANTITY and VALUE of GOLD entered for EXPORTATION from NEW ZEALAND for the Years ended the 31st December, 1902 and 1901, and the TOTAL QUANTITY and VALUE from 1857 to the 31st December, 1902.

District and County or Borough.	Year ending 31st December, 1902.		Year ending 31st December, 1901.		Increase or Decrease for Year ending 31st December, 1902.		Total Quantity and Value from January, 1857, to 31st December, 1902.	
	Quantity.	Value.	Quantity.	Value.	Increase.	Decrease.		
AUCKLAND—	Oz.	£	Oz.	£	Oz.	Oz.	Oz.	£
County of Coromandel ..	11,075	46,608	10,543	44,521	532	..	..	..
County of Thames ..	13,805	53,179	8,853	36,948	4,952	..	..	..
County of Ohinemuri ..	59,293	211,413	160,696	567,806	..	101,403	..	..
County of Piako	249	1,046	661	2,795	..	412	..	..
County of Manukau ..	..	..	..	..	..	..	..	..
County of Marsden ..	..	..	..	..	..	..	..	..
County of Whangarei ..	..	..	..	..	..	..	..	..
Borough of Thames ..	4,389	18,097	4,953	20,774	..	564	..	..
Te Aroha Town District ..	..	..	..	..	..	..	..	..
Great Barrier Island ..	82	347	6,240	22,613	..	6,158	..	..
County of Tauranga ..	22	90	22	94	..	..	..	..
Borough of Waihi ..	112,668	391,197	..	..	112,668	..	..	..
	201,583	721,977	191,968	695,551	9,615	..	3,009,015	11,234,843
WELLINGTON	..	..	..	..	..	..	188	706
MARLBOROUGH—								
County of Marlborough ..	601	2,404	133	513	468	..	87,654	341,479
NELSON—								
County of Waimea	5,947	23,649	168	661	..	1,265	..	..
County of Collingwood			7,044	27,477	..	..	..	..
	5,947	23,649	7,212	28,138	..	1,265	1,692,155	6,708,008
WEST COAST—								
County of Buller	11,036	44,239	8,967	35,937	2,069	..	..	..
County of Inangahua ..	56,245	224,981	58,633	235,046	..	2,388	..	..
County of Grey	33,942	135,765	25,648	102,896	8,294	..	..	..
County of Westland ..	15,341	61,361	17,930	71,697	..	2,589	..	..
Kumara Borough	..	..	..	..	..	..	..	..
Hokitika Borough ..	142	566	613	2,455	..	471	..	..
Ross Borough	2,090	8,360	1,495	5,975	595	..	..	..
	118,796	475,272	113,286	454,006	5,510	..	4,775,674	19,003,554
CANTERBURY—								
County of Ashburton ..	2	7	22	83	..	20	99	387
OTAGO—								
County of Taieri	2,812	11,355	1,602	6,484	1,210	..	..	..
County of Tuapeka ..	46,212	186,760	38,314	154,798	7,898	..	..	..
County of Vincent ..	74,789	298,887	55,594	222,646	19,195	..	..	..
County of Maniototo ..	9,526	38,237	10,870	44,083	..	1,344	..	..
County of Waihemo ..	3,426	13,868	2,450	9,824	976	..	..	..
County of Waikouaiti ..	83	337	80	320	3	..	..	..
County of Waitaki ..	2,079	8,323	1,954	7,935	125	..	..	..
County of Bruce	1,193	4,813	1,779	7,135	..	586	..	..
County of Lake	7,734	31,364	5,614	23,553	1,920	..	..	..
County of Wallace ..	7,129	28,744	9,570	38,434	..	2,441	..	..
County of Fiord	164	658	515	2,063	..	351	..	..
County of Southland ..	24,928	100,614	13,438	54,377	11,490	..	..	..
County of Clutha	4	16	410	1,640	..	406	..	..
Borough of Alexandra ..	..	..	..	..	..	..	..	..
Dunedin	..	..	..	..	..	..	..	..
Borough of Mataura ..	1,037	4,148	550	2,200	487	..	..	..
	181,116	728,124	142,940	575,492	38,176	..	6,007,515	23,821,515
Unknown	..	..	..	..	..	..	207	824
Totals	508,045	1,951,483	455,561	1,753,783	52,484	..	15,572,507	61,111,316

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No 3.

TABLE showing the TOTAL QUANTITY and VALUE of GOLD entered for DUTY for EXPORTATION from the 1st January, 1857, to the 31st December, 1902. (This Return shows the Output of the various Goldfields. Gold entered at Nelson from Hokitika, Greymouth, and Westport is put under the head of "West Coast," and Gold from Invercargill and Riverton under the head of "Otago.")

Year.	Auckland.		Nelson.		Marlborough.		West Coast.		Otago.		Wellington.		Canterbury.		Grand Totals.	
	Oz.	Value.	Oz.	Value.	Oz.	Value.	Oz.	Value.	Oz.	Value.	Oz.	Value.	Oz.	Value.	Oz.	Value.
		£		£		£		£		£		£		£		£
1857 ..	..	..	10,437	40,422	..	..	..	..	..	..	..	..	..	..	10,437	40,422
1858 ..	308	1,192	13,226	51,272	..	..	..	..	..	..	..	..	..	..	13,534	52,464
1859 ..	..	..	7,336	28,427	..	..	..	..	..	..	..	..	..	..	7,336	28,427
1860 ..	..	..	4,538	17,585	..	..	..	..	..	..	..	..	..	..	4,538	17,585
1861 ..	..	..	6,335	24,552	..	..	..	..	187,696	727,321	..	..	..	..	194,031	751,873
1862 ..	1,239	4,098	10,422	40,386	..	..	..	..	399,201	1,546,905	..	..	..	..	410,862	1,591,389
1863 ..	4,483	13,853	9,580	37,120	..	..	..	..	614,387	2,380,750	..	..	..	..	628,450	2,431,723
1864 ..	3,448	10,552	14,410	55,841	24,838	95,231	1,463	5,560	436,012	1,689,653	..	..	..	..	480,171	1,856,837
1865 ..	5,449	17,096	12,137	47,030	7,952	30,814	289,897	1,127,370	259,139	1,004,163	..	..	..	..	574,574	2,226,474
1866 ..	5,814	17,463	7,650	29,643	469	1,818	552,572	2,140,946	168,871	654,647	..	..	..	..	735,376	2,844,517
1867 ..	6,637	18,277	9,123	35,918	501	1,978	511,974	2,018,874	158,670	623,815	..	..	..	..	686,905	2,698,862
1868 ..	53,660	168,874	5,999	38,396	404	1,616	405,762	1,608,844	171,649	686,596	..	..	..	..	637,474	2,504,326
1869 ..	132,451	434,687	10,631	42,524	666	2,664	317,169	1,269,664	153,364	613,456	..	..	..	..	614,281	2,362,995
1870 ..	85,534	319,146	12,244	48,692	1,852	7,408	280,068	1,121,525	165,152	660,694	30	120	..	..	544,880	2,157,585
1871 ..	330,326	1,188,708	10,014	40,056	1,867	7,468	232,882	931,528	154,940	619,760	..	..	..	..	730,029	2,787,520
1872 ..	104,890	369,341	8,175	32,700	2,057	8,228	172,574	690,296	157,674	630,696	..	..	..	..	445,370	1,731,261
1873 ..	119,449	437,123	13,697	54,786	1,274	5,050	188,501	756,442	182,416	734,024	..	..	..	..	505,337	1,987,425
1874 ..	76,910	305,068	5,642	22,158	1,198	4,748	157,531	631,203	135,107	542,154	..	..	..	..	376,388	1,505,331
1875 ..	69,485	262,156	4,577	17,866	1,159	4,636	158,678	635,480	121,423	487,632	..	..	..	..	355,322	1,407,770
1876 ..	56,057	221,905	14,018	55,862	450	1,796	133,014	531,274	118,477	473,491	..	..	..	..	322,016	1,284,328
1877 ..	99,081	403,627	5,367	21,092	870	3,197	153,198	612,823	113,169	455,341	..	..	..	..	371,685	1,496,080
1878 ..	55,982	220,454	4,463	17,223	404	1,617	144,634	578,508	105,008	422,277	..	..	..	..	310,486	1,240,079
1879 ..	37,901	154,295	2,993	11,424	879	3,460	142,822	571,061	102,869	407,868	..	..	..	..	287,464	1,148,108
1880 ..	42,720	176,416	3,222	12,223	1,550	5,650	144,090	575,258	113,666	457,705	..	..	..	..	305,248	1,227,252
1881 ..	35,516	141,326	3,453	13,039	1,378	4,531	127,544	509,971	102,670	411,923	..	..	..	..	270,561	1,080,790
1882 ..	33,059	131,007	3,289	12,494	1,352	5,400	130,048	519,978	83,446	333,804	10	37	..	..	251,204	1,002,720
1883 ..	41,291	163,618	2,064	7,724	636	2,524	116,905	467,152	87,478	352,334	..	..	..	..	248,374	993,352
1884 ..	36,087	143,564	2,159	8,002	1,079	4,306	111,686	446,517	78,810	318,932	101	380	24	96	229,946	921,797
1885 ..	42,989	170,416	2,798	10,337	540	2,160	117,861	471,325	73,183	294,378	..	..	..	..	237,371	948,615
1886 ..	32,271	128,140	2,582	9,979	404	1,451	112,671	446,287	79,104	317,543	47	169	..	..	227,079	903,569
1887 ..	30,697	121,564	2,914	10,829	1,041	3,759	98,774	395,430	70,443	279,518	..	..	..	..	203,869	811,100
1888 ..	35,223	139,556	3,027	11,320	699	2,547	100,139	400,405	62,107	247,142	..	..	24	96	201,219	801,066
1889 ..	28,655	113,191	3,252	12,310	5,189	20,167	101,696	406,451	64,419	256,430	..	..	..	..	203,211	808,549
1890 ..	31,745	125,760	2,856	11,049	6,073	24,285	89,096	356,368	63,423	255,976	..	..	..	..	193,193	773,438
1891 ..	45,392	181,185	4,445	16,896	5,649	22,576	109,268	437,126	87,209	349,573	33	132	..	..	251,996	1,007,488
1892 ..	45,555	183,655	2,535	9,604	3,898	15,429	103,106	412,383	82,933	333,467	52	206	..	..	238,079	954,744
1893 ..	45,714	186,553	2,145	8,187	2,165	8,644	99,127	396,516	77,660	313,238	..	..	..	..	226,811	913,138
1894 ..	52,916	211,974	2,860	10,634	2,586	10,123	86,950	347,464	76,353	307,644	..	..	..	..	221,615	887,889
1895 ..	111,213	430,862	2,460	9,016	2,695	10,771	89,429	357,719	87,694	353,796	..	..	..	..	293,491	1,162,164
1896 ..	92,346	350,355	2,753	10,333	916	3,588	79,317	317,161	88,362	359,991	..	..	..	..	263,694	1,041,428
1897 ..	105,477	392,337	1,892	7,055	810	3,195	58,817	235,430	84,649	342,187	..	..	..	..	251,645	980,204
1898 ..	142,383	527,786	1,720	6,882	781	3,003	79,948	319,789	55,343	223,231	..	..	..	..	280,175	1,080,691
1899 ..	168,769	624,737	419	1,571	..	..	90,031	360,149	130,311	526,605	..	..	28	111	389,558	1,513,173
1900 ..	166,342	605,398	3,718	14,605	535	2,147	73,923	295,733	129,075	521,629	..	..	23	90	373,616	1,439,602
1901 ..	191,968	695,551	7,212	28,188	133	513	118,286	454,006	142,940	575,492	..	..	22	88	455,561	1,753,783
1902 ..	201,583	721,977	5,947	23,649	601	2,404	118,796	475,272	181,116	728,124	..	..	2	7	508,045	1,951,433
Totals ..	3,099,015	11,284,843	272,736	1,076,851	87,500	340,902	6,195,247	24,635,288	6,007,613	23,821,905	278	1,044	129	483	15,572,507	61,111,316

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No. 4.

TABLE showing the TOTAL QUANTITY and VALUE of MINERAL ORES other than GOLD (the Product of New Zealand Mines), COAL, COKE, and KAURI-GUM, exported from the Colony up to the 31st December, 1902.

Year.	Silver.		Copper-ore.		Chromite-ore.		Antimony-ore.		Manganese-ore.		Hæmatite-ore.		Mixed Mineral Ores.		Coal.*		Coke.		Kauri-gum.		Total.		
	Oz.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.	Oz.	Tons.	Value
		£		£		£		£		£		£		£		£		£		£			£
1853 ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	830	15,972	..	830	15,972
1854 ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,661	28,864	..	1,661	28,864
1855 ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	355	4,514	..	355	4,514
1856 ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,440	18,591	..	1,440	18,591
1857 ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,522	35,251	..	2,522	35,251
1858 ..	..	..	351	5,000	3	25	..	..	..	..	..	..	..	..	2	4	..	..	1,811	20,037	..	2,167	25,066
1859 ..	..	..	245	2,605	8	120	..	..	..	..	..	..	..	..	..	..	..	..	2,010	20,776	..	2,263	23,501
1860 ..	..	..	137	1,590	116	1,440	..	..	..	..	..	..	..	..	1	2	..	..	1,046	9,851	..	1,300	12,883
1861 ..	..	..	110	1,300	52	520	..	..	..	..	..	..	..	..	..	..	..	..	856	9,888	..	1,018	11,708
1862 ..	..	..	51	1,024	3,843	24,719	..	..	..	..	..	..	..	..	..	..	..	..	1,103	11,107	..	3,997	36,850
1863 ..	..	..	..	..	595	4,318	..	..	..	..	..	..	..	..	..	..	..	..	1,400	27,026	..	1,995	31,344
1864 ..	..	..	..	..	768	4,910	..	..	..	..	..	..	..	..	..	..	..	..	2,228	60,590	..	2,996	65,500
1865 ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,867	46,060	..	1,867	46,060
1866 ..	..	..	..	..	281	1,315	..	..	..	..	..	..	..	..	261	400	..	..	2,535	70,572	..	3,077	72,287
1867 ..	..	..	246	2,700	..	..	..	..	..	..	..	..	..	..	973	1,228	..	..	2,685	77,491	..	3,904	81,419
1868 ..	..	..	84	977	..	..	..	..	..	..	..	..	..	..	1,027	1,210	..	..	2,690	72,493	..	3,801	74,680
1869 ..	11,063	2,993	..	..	..	..	..	..	..	..	..	..	..	..	750	800	..	..	2,850	111,307	11,063	3,600	115,100
1870 ..	37,123	11,380	7	120	..	..	..	..	..	..	..	..	..	..	1,672	1,508	..	..	4,391	175,074	37,123	6,070	188,082
1871 ..	80,272	23,145	..	..	..	..	..	..	..	..	..	..	..	..	1,696	1,612	..	..	5,054	167,958	80,272	6,750	192,715
1872 ..	37,064	9,910	..	..	..	..	..	..	..	..	..	..	..	..	990	855	21	50	4,811	154,167	37,064	5,882	164,982
1873 ..	36,187	9,850	..	..	..	..	..	..	..	..	..	..	..	..	724	655	..	..	2,834	85,816	36,187	3,558	96,321
1874 ..	40,566	10,380	..	..	..	..	..	..	..	..	..	..	..	..	1,463	1,363	87	228	2,569	79,986	40,566	4,119	91,957
1875 ..	29,085	7,569	..	..	..	..	..	..	..	..	..	..	..	..	3,385	3,129	15	51	3,231	138,523	29,085	6,631	149,272
1876 ..	12,683	3,171	..	..	..	..	..	..	..	..	..	..	3,180	14,824	1,854	1,954	53	189	2,888	109,234	12,683	7,975	129,372
1877 ..	33,893	7,556	..	..	..	..	..	..	..	..	..	..	2,366	9,664	2,658	2,071	25½	72	3,633	118,348	33,893	8,682½	137,711
1878 ..	23,019	5,755	6	115	..	..	4	102	2,516	10,416	..	..	2	8	6,362	5,139	85	177	3,445	132,975	23,019	12,120	154,687
1879 ..	20,645	4,512	55	1,105	..	..	..	..	2,140	8,338	..	..	..	..	7,144	6,187	154	324	3,229	147,535	20,645	12,722	168,001
1880 ..	20,005	4,500	..	..	..	..	60	612	2,611	10,423	..	..	2,674	11,335	7,020	5,977	87	135	4,725	242,817	20,005	17,177	275,799
1881 ..	18,885	4,236	5	36	..	..	2	24	1,271	3,283	..	..	1,955	4,303	6,621	5,610	223	353	5,461	253,778	18,885	15,538	271,623
1882 ..	5,694	1,286	9	41	..	..	30	900	2,181	6,963	..	..	2,784	8,597	3,207	2,380	275	480	5,533	260,369	5,694	14,019	281,016
1883 ..	16,826	3,785	46	678	..	..	31	804	384	1,155	0½	12	22	110	6,522	4,879	1,430	2,057	6,518	336,606	16,826	14,953½	350,086
1884 ..	24,914	5,125	20	106	..	..	..	..	318	809	..	..	..	..	6,104	4,461	236	372	6,393	342,151	24,914	13,071	353,024
1885 ..	16,624	3,169	..	..	..	..	666	5,289	602	1,716	50½	208	114	993	43,893	51,257	267	385	5,875½	299,762	16,624	51,468½	362,779
1886 ..	12,108	2,946	20	390	..	..	62	1,784	328½	1,316	..	..	445	1,846	46,136	52,133	497	715	4,920½	257,653	12,108	52,409½	318,783
1887 ..	20,809	3,453	..	..	..	..	134	3,989	305	895	..	..	144	4,142	44,129	44,650	183½	266	6,791	362,449	20,809	51,686½	419,844
1888 ..	403	71	2	75	..	..	376	6,246	1,085	2,404	..	..	162	2,955	68,087	64,971	953	1,646	8,482	380,933	403	79,147	459,301
1889 ..	24,105	4,043	..	..	..	..	493	5,319	1,080	2,569	..	..	199	9,985	86,405	84,347	2,132	3,407	7,519	329,590	21,105	97,828	439,260
1890 ..	32,637	6,162	..	..	..	..	515	11,121	482	1,004	1½	5	19	273	69,614	67,003	2,218	3,334	7,488	378,563	32,637	80,287½	467,465
1891 ..	28,023	5,151	0½	4	..	..	413	4,950	1,153	2,634	..	1	2	6	91,664	91,173	2,544	3,658	8,388	437,056	28,023	104,164½	544,633
1892 ..	22,053	3,996	..	..	..	..	364	4,900	521	1,239	..	..	84	631	78,911	80,225	4,306	5,691	8,705	517,678	22,053	92,891	614,360
1893 ..	63,076	9,749	..	..	..	..	331	3,467	319	943	..	..	37	650	69,136	72,699	51	53	8,317	510,775	63,076	78,191	598,330
1894 ..	54,177	6,697	..	..	..	..	44	761	534	1,156	..	..	25	353	75,004	73,438	107	160	8,338	404,567	54,177	84,052	487,132
1895 ..	85,024	10,679	..	..	..	..	54	1,486	210	525	..	..	62	880	85,987	83,342	288	715	7,425	418,766	85,024	94,026	516,398
1896 ..	94,307	10,589	..	..	..	..	21	450	65	205	..	..	37	1,335	79,524	71,984	105	263	7,126	431,323	94,307	86,878	516,149
1897 ..	183,892	20,872	..	2	..	..	10	157	180	541	..	..	1,561	5,892	76,073	69,595	..	..	6,641½	398,010	183,892	84,465½	495,069
1898 ..	293,851	33,107	2½	70	..	..	..	..	217	703	..	..	1,628	4,792	56,332	50,381	9	14	9,905	586,767	293,751	68,253½	675,884
1899 ..	349,338	40,838	..	..	..	..	..	..	135	407	..	..	1,309	6,591	89,480	83,085	18	9	11,116	607,919	349,338	102,058	738,849
1900 ..	326,457	38,879	12	45	28	110	3	101	166	588	..	..	2,126	12,751	112,707	98,136	..	..	10,159	622,293	326,457	125,201	772,903
1901 ..	571,134	65,258	3	105	..	..	30	136	208	614	..	..	696	7,775	159,643	142,176	..	..	7,541	446,114	571,134	168,121	662,178
1902 ..	674,196	71,975	..	..	175	525	..	..	..	..	17	116	415	4,422	188,677	154,747	..	..	7,430	450,223	674,196	196,714	682,008
Totals	3,900,138	452,781	1,411½	18,088	5,869	38,002	3,643	52,598	19,011½	60,846	69½	342	22,248	115,113	1,581,838	1,486,766	16,370	24,804	236,722	11,226,168	3,300,138	1,887,182½	13,475,508

* Total output of coal in colony (including exports) approximately estimated at 17,157,596 tons, valued at £8,578,798.

NOTE.—"Mixed mineral ores" include sulphur, &c. Last year 2,338 tons of shale was mined at Orepuki.

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No. 5.

RETURN showing the QUANTITY and VALUE of COALS IMPORTED into NEW ZEALAND during the Quarter ended the 31st March, 1903.

Country whence imported.	Quantity.	Value.
	Tons.	£
New South Wales	37,657	35,727
Tasmania	Nil	Nil
Totals	37,657	35,727

No. 6.

TABLE showing the INCREASE or DECREASE in the PRODUCTION of COAL in the Colony, and IMPORTED, Year by Year, during the last Twenty-five Years.

Year.	Coal raised in the Colony.		Coal imported.		
	Tons.	Yearly Increase or Decrease.	Tons.	*Plus* or *Minus*.	Increase and Decrease.
1878	162,218	..	174,148	..	..
1879	231,218	69,000	158,076	–	16,072
1880	299,923	68,705	123,298	–	33,778
1881	337,262	37,339	129,962	+	6,664
1882	378,272	41,010	129,582	-	380
1883	421,764	43,492	123,540	-	6,042
1884	480,831	59,069	148,444	+	24,904
1885	511,063	30,232	130,202	–	18,242
1886	534,353	23,290	119,873	–	10,329
1887	558,620	24,267	107,230	–	12,643
1888	613,895	55,275	101,341	–	5,889
1889	586,445	27,450	128,063	+	26,722
1890	637,397	50,952	110,939	–	17,124
1891	668,794	31,397	125,318	+	14,379
1892	673,315	4,521	125,453	+	135
1893	691,548	18,233	117,444	–	8,009
1894	719,546	27,998	112,961	–	4,483
1895	726,654	7,108	108,198	–	4,763
1896	792,851	66,197	101,756	–	6,442
1897	840,713	47,862	110,907	+	9,151
1898	907,033	66,320	115,427	+	4,520
1899	975,234	68,201	99,655	–	15,772
1900	1,093,990	118,756	124,033	+	24,378
1901	1,239,686	145,696	149,764	+	25,731
1902	1,365,040	125,354	127,853	–	21,911

No. 7.

TABLE showing the OUTPUT of COAL from the various Mining Districts, and the Comparative INCREASE and DECREASE, for the Years 1902 and 1901, together with the TOTAL APPROXIMATE QUANTITY of COAL produced since the Mines were opened.

Name of District.	Output of Coal.		*Plus* or *Minus*.	Increase or Decrease.	Approximate Total Output of Coal up to 31st December, 1902.
	1902.	1901.			
	Tons.	Tons.		Tons.	Tons.
Kawakawa and Hikurangi	60,606	53,298	+	7,308	1,250,424
Whangarei, Kamo, Ngunguru, and Whauwhau	32,155	33,757	–	1,602	499,774
Waikato	91,541	84,086	+	7,455	1,342,795
Mokau	4,250	3,513	+	737	33,784
Miranda	3,493	430	+	3,063	3,923
Pelorus	..	..	..	..	711
West Wanganui	..	2,208	–	2,208	55,183
Westport	528,462	455,057	+	73,405	4,710,012
Reefton	8,760	6,102	+	2,658	99,006
Greymouth	216,594	206,168	+	10,426	3,299,882
Canterbury (Malvern	19,445	16,098	+	3,347	418,929
Canterbury (Timaru	..	..	..	..	10,657
Otago	308,310	289,322	+	18,988	4,670,969
Southland	91,424	89,647	+	1,777	761,547
Totals	1,365,040	1,239,686	+	125,354	17,157,596

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No. 8.

TABLE showing the DIFFERENT CLASSES of COAL from the MINES in the COLONY.

Name of Coal.	Output of Coal.		Increase or Decrease.	Approximate Total Output of Coal up to the 31st December, 1902.
	1902.	1901.		
	Tons.	Tons.	Tons.	Tons.
Bituminous and semi-bituminous ..	845,046	754,953	+ 90,093	9,546,823
Pitch	25,245	14,584	+ 10,661	1,837,956
Brown	427,172	405,152	+ 22,020	5,151,271
Lignite	65,239	52,949	+ 12,290	607,160
Shale	2,338	12,048	− 9,710	14,386
Totals	1,365,040	1,239,686	+125,354	17,157,596

No. 9.

TABLE showing the NUMBER of COAL-MINES in OPERATION, the NUMBER of MEN EMPLOYED, and the OUTPUT of COAL per MAN.

Number of Mines working.	Number of Men employed at each Mine.	Total Number of Men employed.	Output of Coal during 1902.	Average Output per Man.
			Tons.	Tons.
110	1 to 4 in each	161	39,075	242·70
32	5 to 10 "	204	94,403	462·76
16	11 to 20 "	221	93,213	421·77
22	21 and upwards	2,299	1,138,349	495·15
180		2,885	1,365,040	473·15

No. 10.

RETURN showing the QUANTITY and VALUE of COAL IMPORTED INTO and EXPORTED FROM NEW ZEALAND during the Year ended the 31st December, 1902.

Imported.			Exported.		
Countries whence imported.	Quantity.	Value.	Countries to which exported.	Quantity.	Value.
	Tons.	£		Tons.	£
United Kingdom	5	2	United Kingdom	82,899	76,698
New South Wales	126,548	124,430	Victoria	..	..
Victoria	1,300	1,300	New South Wales ..	10,400	12,352
			Cape Colony	130	127
			Natal	2,023	2,023
			United States of America—		
			On the West Coast ..	1,699	2,247
			Fiji Islands	9,711	7,823
			South Sea Islands ..	3,706	2,717
			Hongkong	81,366	53,952
			Western Australia ..	..	..
			Tasmania	..	..
			Norfolk Island	670	703
			Antarctic Regions ..	..	..
Totals	127,853	125,732	Totals	192,104	158,642

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No. 11.

NUMBER of MINERS EMPLOYED during the Years ended 31st December, 1901 and 1902.

District	Alluvial Miners.		Quartz-miners.		Totals.		Grand Totals.	
	European.	Chinese.	European.	Chinese.	European.	Chinese.	1901.	1902.
AUCKLAND—								
Coromandel	..	..	314	..	314	..	400	314
Thames	..	..	478	..	478	..	758	478
Paeroa	..	..	735	..	735	..	2,320	735
Te Aroha	..	..	18	..	18	..	25	18
Tauranga	..	..	12	..	12	..	5	12
Waihi	..	..	1,195	..	1,195	..	..	1,195
	..	..	2,752	..	2,752	..	3,508	2,752
MARLBOROUGH—								
Havelock	63	..	11	..	74	..	72	74
Blenheim	23	..	18	..	41	..	55	41
Cullensville	20	..	..	..	20	..	62	20
	106	..	29	..	135	..	189	135
NELSON—								
Wangapeka and Sherry	7	..	..	..	7	..	8	7
Takaka	24	..	..	..	24	..	24	24
Collingwood	96	..	60	..	156	..	143	156
Motueka	7	..	..	..	7	..	10	7
Inangahua	232	150	650	..	882	150	1,011	1,032
Ahaura	350	94	35	..	385	94	1,139	479
Charleston	130	..	..	..	130	..	130	130
Westport, including Addison's, Northern Terraces, Waimangaroa, North Beach, Mokihinui, Karamea, and Lower Buller Valley	225	..	15	..	240	..	250	240
Lyell	20	15	35	..	55	15	70	70
Murchison	75	25	..	..	75	25	120	100
Owen								
	1,166	284	795	..	1,961	284	2,905	2,245
WESTLAND—								
Ross	79	2	..	..	79	2	102	81
Stafford and Goldsborough	190	40	..	..	190	40	250	230
Hokitika and Kanieri	380	40	..	..	380	40	180	420
Kumara	364	39	..	..	364	39	120	403
Greymouth	781	183	..	..	781	183	958	964
Arnold								
Okarito	46	1	..	..	46	1	71	47
	1,840	305	..	..	1,840	305	1,681	2,145
OTAGO—								
Hindon	20	2	21	..	41	2	28	43
Tuapeka	425	150	25	..	450	150	600	600
Clyde, Roxburgh, Black's, and Alexandra	890	105	8	..	898	105	1,058	1,003
Cromwell	360	50	15	..	375	50	528	425
Tapanui	10	2	..	..	10	2	22	12
Waikaia	140	30	..	..	140	30	200	170
Wyndham	8	..	..	..	8	..	15	8
Waiau	20	..	..	..	20	..	20	20
Orepuki and Preservation	420	65	30	..	450	65	545	515
Roundhill	90	40	..	..	90	40	135	130
Wakatipu Goldfields—Arrow, Macetown, Cardrona, Kawarau, Bracken's, and Motatapu	119	12	30	..	149	12	190	161
Queenstown	140	25	15	..	155	25	329	180
Naseby								
St. Bathan's	274	113	87	..	361	113	400	474
Hyde								
Macrae's								
Maerewhenua and Kurow	90	..	..	..	90	..	90	90
Pembroke	30	12	..	..	30	12	42	42
Gore	233	15	..	..	233	15	247	248
	3,269	621	231	..	3,500	621	4,449	4,121
SUMMARY.								
AUCKLAND	..	..	2,752	..	2,752	..	3,508	2,752
MARLBOROUGH	106	..	29	..	135	..	189	135
NELSON	1,166	284	795	..	1,961	284	2,905	2,245
WESTLAND	1,840	305	..	..	1,840	305	1,681	2,145
OTAGO	3,269	621	231	..	3,500	621	4,449	4,121
Totals	6,381	1,210	3,807	..	10,188	1,210	12,732	11,398

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DIAGRAM showing TOTAL QUANTITY & VALUE of GOLD exported from N.Z.
for the years 1857 to 1902.

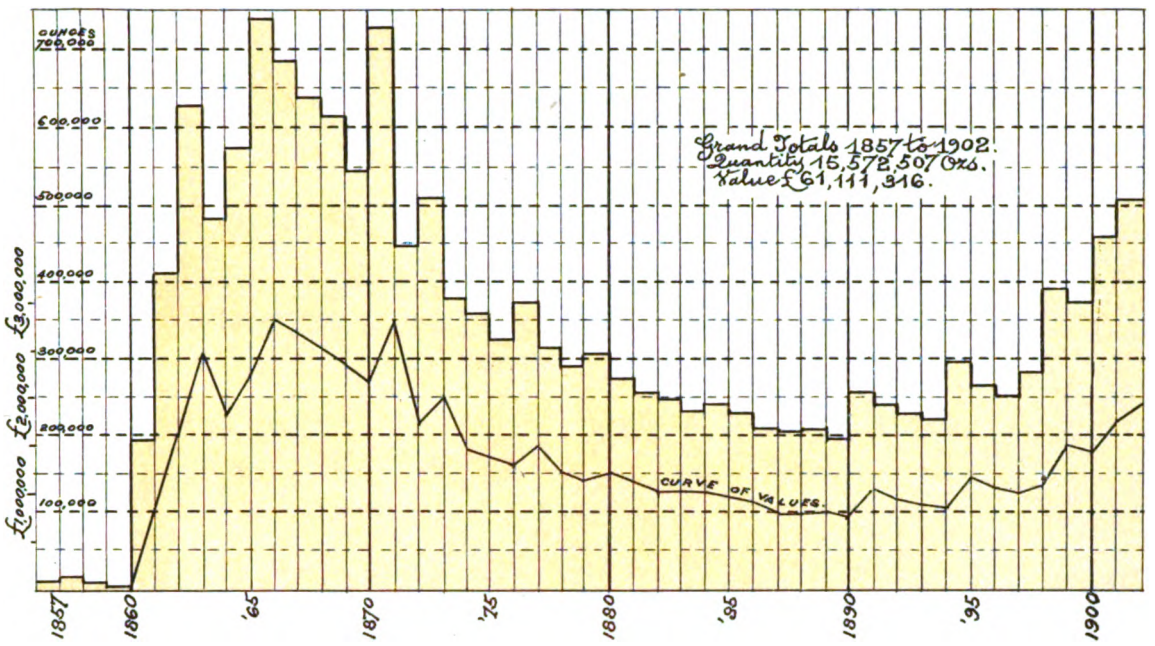


DIAGRAM showing TOTAL QUANTITY & VALUE of KAURI GUM exported from N.Z.
for the years 1853 to 1902.

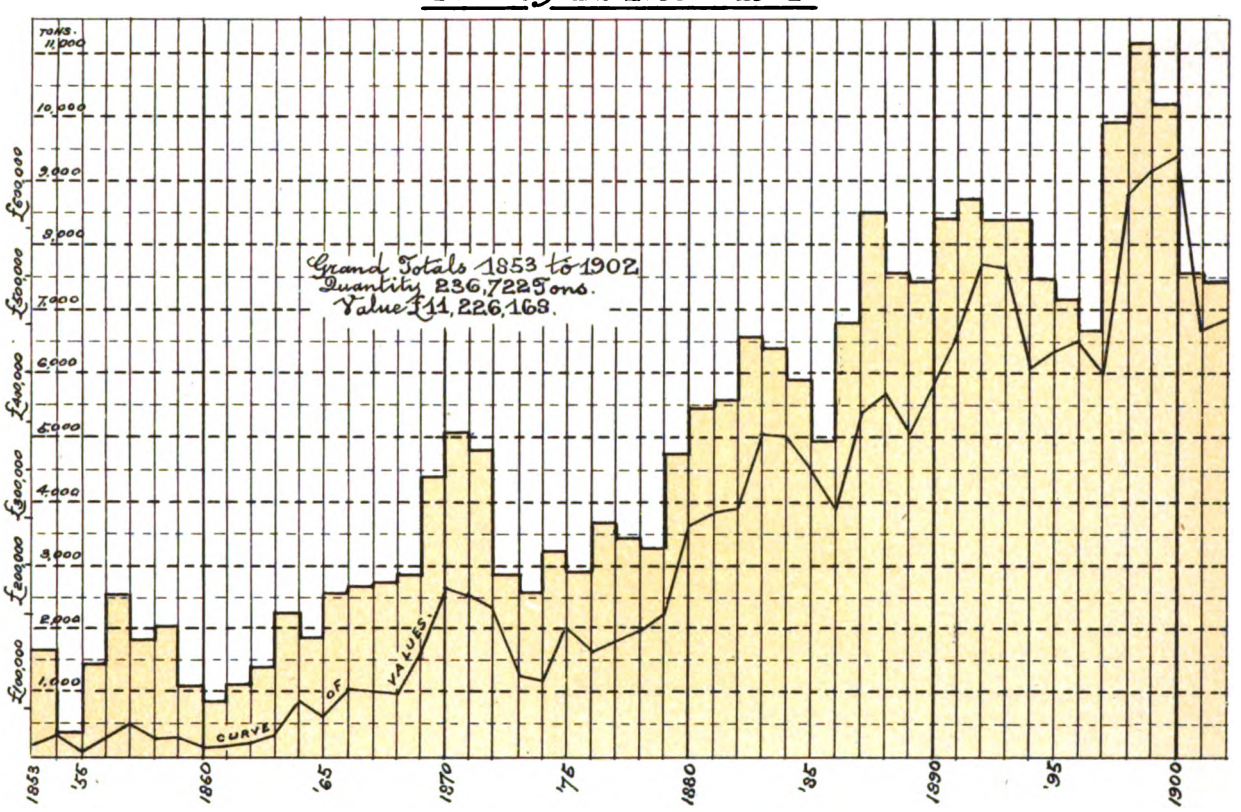
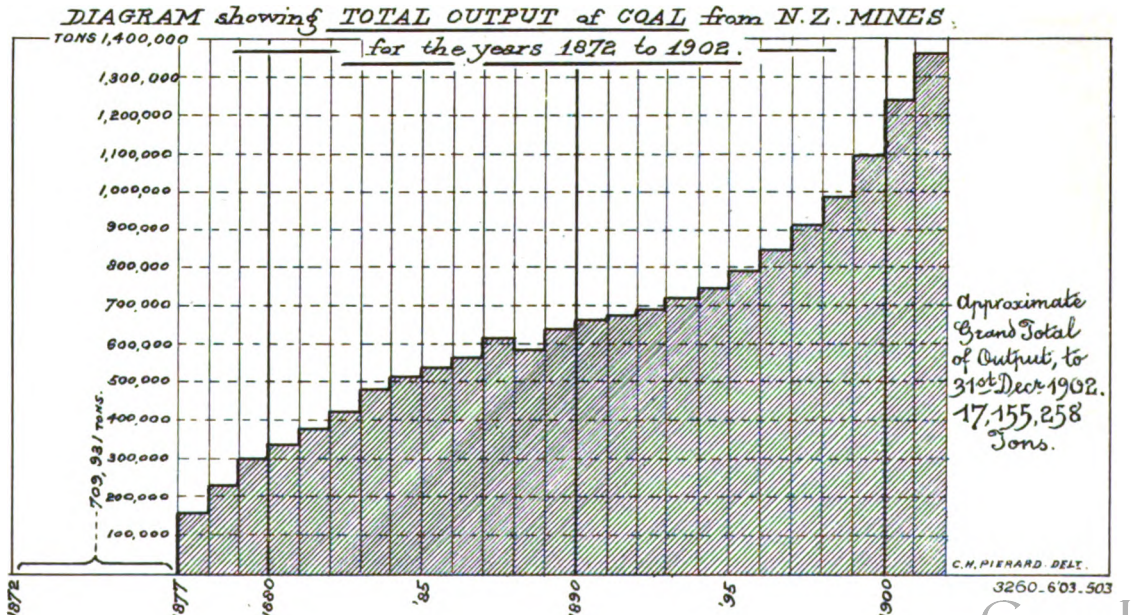


DIAGRAM showing TOTAL OUTPUT of COAL from N.Z. MINES
for the years 1872 to 1902.



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NEW ZEALAND.

THE GOLDFIELDS OF NEW ZEALAND:

REPORT ON ROADS, WATER-RACES, MINING MACHINERY, AND OTHER WORKS IN CONNECTION WITH MINING.

Presented to both Houses of the General Assembly by Command of His Excellency.

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1903.

NEW ZEALAND.

THE GOLDFIELDS OF NEW ZEALAND:

REPORT ON ROADS, WATER-RACES, MINING MACHINERY, AND OTHER WORKS IN CONNECTION WITH MINING.

Presented to both Houses of the General Assembly by Command of His Excellency.

Mr. JOHN HAYES, F.S.Sc., Inspecting Engineer, to the Hon. JAMES McGOWAN, Minister of Mines.

SIR,— Mines Department, Wellington, 11th May, 1903.

I have the honour to submit my report, together with those of Inspectors of Mines, Wardens, and other officers connected with the Department, for the year ending the 31st December, 1902.

In accordance with the usual custom, the tables showing Government expenditure on roads, bridges, tracks, prospecting operations, &c., are given for the financial year (1st April, 1902, to 31st March, 1903).

SUBSIDISED ROADS AND TRACKS.

The expenditure (as subsidies) authorised and the liabilities on outstanding authorities for the year ending the 31st March, 1903, are as follows:—

Name of Local Body.	Expenditure for the Year ending 31st March, 1903.	Liabilities on Authorities on 31st March, 1903.
	£ s. d.	£ s. d.
Thames County	...	100 0 0
Thames Borough	174 2 6	112 10 0
Ohinemuri County	283 10 0	99 0 0
Piako County	...	75 0 0
Collingwood County	137 0 1	...
Buller County	200 0 0	250 0 0
Grey County	189 8 1	485 11 11
Tuapeka County	400 0 0	340 0 0
Knapdale Road Board	...	50 0 0
Contingencies	109 11 6	...
Totals	1,493 12 2	1,512 1 11

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ROADS CONSTRUCTED BY DIRECT GRANTS.

The following statement shows the expenditure and liabilities on authorities issued on roads from direct grants to the several local bodies during the year ending the 31st March, 1903 :—

Name of Local Body.	Expenditure for the Year ending 31st March, 1903.	Liabilities on Authorities on 31st March, 1903.
	£ s. d.	£ s. d.
Coromandel County	6,424 2 9	5,484 11 6
Thames County	4,047 19 6	2,960 10 8
Thames Borough	50 0 0	...
Ohinemuri County	3,190 4 5	4,494 6 0
Piako County	105 0 0	...
Tauranga County	100 0 0	187 0 0
Pelorus Road Board	96 0 0	261 0 0
Wairau Road Board	...	600 0 0
Collingwood County	1,721 19 0	2,929 16 6
Waimea County	689 0 0	734 5 8
Buller County	4,750 0 0	8,550 0 0
Inangahua County	2,462 12 10	2,390 8 0
Grey County	4,245 0 0	2,416 0 0
Brunner Borough	231 12 0	...
Westland County	3,424 6 5	1,761 14 6
Hokitika Borough	...	100 0 0
Taieri County	...	400 0 0
Bruce County	127 15 0	22 5 0
Tuapeka County	1,925 0 0	2,000 0 0
Vincent County	...	2,725 0 0
Lake County	797 10 0	1,810 0 0
Southland County	850 0 0	950 0 0
Knapdale Road Board	150 0 0	150 0 0
Wallace County	...	100 0 0
Roads Department	5,050 9 3	3,165 6 8
Public Works Department	9,758 2 0	3,871 3 0
Totals	50,196 13 2	48,063 7 6

PROSPECTING FOR GOLD.

The following statement shows the expenditure and liabilities on authorities issued in subsidies to prospecting associations and parties of miners recommended by the local bodies in the different counties for the year ending the 31st March last :—

Name of County.	Expenditure for Year ending 31st March, 1903.	Liabilities on Authorities on 31st March, 1903.
	£ s. d.	£ s. d.
Coromandel	123 10 0	26 0 0
Thames	39 9 10	886 9 4
Ohinemuri	16 0 0	...
Marlborough	39 0 0	...
Collingwood	...	19 10 0
Buller	133 9 3	340 11 9
Inangahua	17 13 6	121 1 6
Grey	250 0 0	91 10 0
Westland	511 17 9	311 15 0
Tuapeka	...	25 0 0
Totals	1,131 0 4	1,821 17 7

THE GOLD-MINING INDUSTRY.

Notwithstanding the fact that several mines have closed down during the last two years, the yield of gold throughout the colony has increased. For the year ending the 31st December, 1901, the value of gold entered for exportation was very largely in excess of that of the previous year; and it is satisfactory to note that an increase, amounting in value to £197,650, is reported for the year ending the 31st December, 1902, the total value for the year being £1,951,433. This is the highest yield since 1873, and makes a total value of £61,111,316 for gold exported from the year 1857 to the end of 1902.

The various branches of the industry are referred to under their several headings.

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PRODUCTION OF GOLD AND SILVER.

The following comparative statements show the quantity and value of gold entered for exportation for the last two calendar and financial years:—

Name of District.	Year ended 31st December, 1902.		Year ended 31st December, 1901.		Increase for 1902.	Decrease for 1902.
	Quantity.	Value.	Quantity.	Value.		
	Oz.	£	Oz.	£	Oz.	Oz.
Auckland ...	201,583	721,977	191,968	695,551	9,615	...
Marlborough ...	601	2,404	133	513	468	...
Nelson	5,947	23,649	7,212	28,138	...	1,265
West Coast ...	118,796	475,272	113,286	454,006	5,510	..
Otago	181,116	728,124	142,940	575,492	38,176	...
Canterbury ...	2	7	22	83	...	20
Totals ...	508,045	1,951,433	455,561	1,753,783	52,484*	...

Name of District.	Year ended 31st March, 1903.		Year ended 31st March, 1902.		Increase for 1903.	Decrease for 1903.
	Quantity.	Value.	Quantity.	Value.		
	Oz.	£	Oz.	£	Oz.	Oz.
Auckland ...	203,158	724,892	201,861	728,498	1,297	...
Marlborough ...	401	1,604	277	1,108	124	...
Nelson	6,235	24,704	4,207	17,118	2,028	...
West Coast ...	125,399	501,639	104,441	418,322	20,958	...
Otago	155,056	623,213	128,200	515,265	26,856	...
Canterbury ...	...	...	19	71	...	19
Totals ...	490,249	1,876,052	439,005	1,680,382	51,244†	...

* Total net increase, value £197,650. † Total net increase, value £195,670.

QUARTZ-MINING.

North Island.

In the Northern district the chief centre of activity is at Waihi. The Waihi Gold-mining Company's mine and plant have been further extended, and, with a view to the development of the property at deeper levels, preparations are being made for the erection of a very large pumping-engine at No. 5 shaft. There is already a compound Hathorn-Davey differential Cornish pumping-engine at No. 2 shaft, and also a similar engine, having a stroke of 10 ft. and working a 17 in. diameter set of pumps, at No. 5 shaft. This latter shaft is intended solely for pumping purposes. When the new pump and engine are erected the present pump will be utilised for unwatering the shaft below its present level as the work of sinking proceeds, the new pump—24 in. in diameter by 12 ft. stroke, worked by compound Hathorn-Davey differential engine—being used to lift the water from the present lodgment to the surface.

With the addition of this new plant it is anticipated that a depth of 2,000 ft. may be reached, and should this be effected there appears little doubt but that the result of pumping from so great a depth will be to drain not only the company's property, but areas adjoining. Such a course would materially and favourably affect neighbouring properties, and it appears quite possible that in the near future some mutual agreements may be advantageously entered into between the Waihi Gold-mining Company and owners of adjacent mines for drainage generally, or, at all events, down to a given level at least.

In the mine sixteen different reefs or lodes have been found. A few of these are narrow, but several are of good workable width. The famous Martha lode is of very large size, and in one part of the mine—where two other reefs junction with it—the great width of 81 ft. is attained. This is made up as follows: Magazine reef, 10 ft.; Regina reef, 19 ft.; Martha reef, 52 ft.: total, 81 ft.

Where the reef attains such a great width it is worked in two divisions of about 40 ft. each, the system of filling the stopes in vogue at this mine lending itself admirably to the method of work adopted.

Filling material (mullock, clay, soil, &c.) is sent down passes from the surface and spread in the stopes as the ore is taken out. This sets very compact, gives the men a good footing to work on, and reduces the amount of timber—which would otherwise be required for securing the ground—very materially. In working the extra-wide reef it is found that by keeping the stoping of the first division well ahead of that of the second division the material used for filling becomes well

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consolidated, and forms a fair wall for the working of the second division of the reef. A very noticeable feature in this reef is that oxidized ore and sulphide ore are to be seen dipping in parallel veins. The ore-reserves appear to be ample for very many years to come.

The battery-works have undergone considerable alterations, and wet crushing has been substituted for the former system of dry crushing; in fact, dry crushing, which for several years was very general in the northern goldfields, is not now practised in New Zealand. The Union battery of forty stamps (formerly the property of the Waihi-Silverton Company) now belongs to the Waihi Company, and has been thoroughly overhauled and modified. This brings up the company's total crushing-power to 330 stamps, as follows: Union battery, 40 stamps; Waihi battery, 90 stamps; Waikino battery, 200 stamps: total, 330 stamps.

The ore treated during the year was 179,485 tons (this being an increase of 20,160 tons as compared with the previous year), yielding a value of £520,138 15s., or nearly £2 18s. per ton. The number of persons employed by the company was 1,141. Dividends amounting to £208,644 18s. 11d. were paid, bringing the total amounts of dividends since commencement to £1,005,934 6s. 2d.

None of the other properties at Waihi have yet reached a productive stage, but hopes are entertained that present difficulties will be overcome, and the mines made to yield an addition to the local output of gold and silver.

Three mines at Karangahake—namely, the New Zealand Crown Mines, the Talisman Consolidated, and the Woodstock—employed 456 persons and treated 54,733 tons of ore during last year. The returns amounted to £107,362 4s. 2d. This represents an average value over the whole of a little less than £2 per ton, but the value from the Crown Mines was rather more than £2 4s. per ton, and a reasonable profit was made on the year's work.

Mining at Waitekauri has been disappointing. Calcite has largely taken the place of gold-bearing quartz, and very little is being done beyond some prospecting-work at Golden Cross shaft.

The Komata Reefs Mines have acquired an area formerly held by the Waitekauri Company, which is being worked. The output for the year was 12,190 tons, value £27,140, or approximately £2 4s. 6d. per ton.

Tairua Broken Hills Mine, which is now held by an Auckland company, has had a very successful year. The mill, of twenty-stamp capacity, is well fitted out with gold-saving appliances, including cyanide plant; and the stone in the mine looks promising. The owners of this mine recently purchased the property known as the Mahara Royal Mine and battery at Tapu, with the intention of removing the plant to Tairua, but have decided, before doing so, to give the Mahara Royal another test at a lower level.

Work is in hand at Neavesville to open up the reef there and erect a battery, the result of prospecting and assays of the quartz being considered sufficiently good to warrant the expenditure.

Somewhat extensive prospecting-work is in hand at Te Puke. For some years a little desultory work has been carried out, and a body of ore running approximately north and south has been struck at various levels. It is with a view to the determination of the extent and value of this ore that the present work has been undertaken.

At Thames quartz-mining is being principally carried on by tributers and small parties of miners, operations by the large companies having come to a complete standstill. The question as to whether payable lodes exist at a greater depth than has hitherto been worked is still unsettled, notwithstanding its great importance not only to the locality but to the colony at large. The hopes that sinking operations would be resumed at the Queen of Beauty shaft have not been realised, and at the end of the year the prospects of such resumption appeared very remote. Some boring has been undertaken by the Victoria Quartz-mining Company, but work is at present suspended.

There is little doubt that the question of payable lodes at deep levels will have to be faced either by sinking or boring, or probably by both methods. The whole matter is one which requires careful consideration, and for the information of those directly interested I cannot do better than quote the following abstracts from a memorandum on the subject by Mr. Alex. McKay, F.G.S., Government Geologist. Mr. McKay says,—

"The Thames Goldfield, during the first twenty years subsequent to the discovery of gold, yielded fortune-making and highly satisfactory returns, after which period the product of the field gradually declined. For some years past, and at the present time, the state of the goldfield has caused, and is causing, the greatest anxiety as to its future prospects. Many mines have ceased to be as payable as was the case formerly, and not a few are in abeyance altogether; and those interested in the field have devised various schemes by which it was hoped a renewal of prosperity might be established.

"Foremost amongst the proposals indicated is sinking to deeper levels, in the hope of reaching another horizon of gold under the comparatively barren rock that underlies the auriferous zone that has hitherto yielded the bulk of the gold obtained. This seemed at first sight an altogether reasonable idea, the general opinion being that the gold in the upper portions of the reefs had reached that position from greater depth in the earth. Agreeably to this generally accepted belief, all that was required to be done was to fix on the most favourable position where deep sinking might be carried on. When Mr. Reginald Murray, the late Government Geologist of Victoria, visited New Zealand, Mr. Gordon, who was then Inspecting Engineer of the Mines Department, and myself accompanied him over the goldfields, and when at the Thames this matter of deep sinking was much and anxiously discussed. The bulk of opinion seemed to favour a position between the Prince Imperial and the Queen of Beauty Mines, principally for the reason that the mines in this part were worked to greater depth relative to sea-level than in other portions of the field. The geological data placed before us seemed to have little influence, farther than it was considered that the Hape Creek breccias had been reached in some of the deeper mines, and consequently further sinking would be commenced in rocks the position of which it had been ascertained

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underlaid the more productive zone hitherto worked. I listened at the various consultations, but had too slender a grasp of the conditions to venture any opinion, more especially as it seemed to me mainly a matter of what mining property should carry the works than the suitableness of any one for the purposes in view; and, indeed, I may say now there was nothing of advantage to choose between them excepting the greater depth of the Queen of Beauty shaft, and the proximity of that to the untried ground of Shortland Flat. Finally, it was afterwards decided to prospect for gold at deep levels from the Queen of Beauty shaft, and a large pumping and winding plant has been installed on that property.

"Another form of prospecting had in the meantime for some years been in progress—*i.e.*, the Moanataiari Tunnel. This at or near sea-level had been driven eastward across the direction of various reef systems, in the hope of thereby intersecting gold-bearing lodes, known lodes at various levels, and yet others it was hoped by this means might be discovered. This work was prosecuted a total distance of 3,000 ft., but scarcely yielded the results anticipated. Hence deep sinking was specially favoured, and considered the more promising procedure, when this as a means of discovery was proposed.

"As mines were worked to greater depth it was found that decomposed andesite was still mainly the rock in which the reefs were contained, and on the foreshore claims east of the Beach Slide country of this class—the 'sandstone' of the miner—has continued to as great depth as has been reached—in the case of the Queen of Beauty shaft to 748 ft. from the surface of the flat at or near sea-level. As to the alterations of the rock at the surface, and at such considerable depths below sea-level, it is not necessary to inquire at this stage, but is a subject that may have to be dealt with further on.

"That part of the field within which lie clustered by far the greater number of reefs, productive or unproductive, finds its limit towards the north near the mouth of the Kuranui Creek, and towards the south on the southern spur of Una Hill, or along the valley of Hape Creek finds its extreme limit. The greater number of reef systems closely clustered together are situated about the middle or north of the middle part of the field. The general trend of the reefs is between N.N.E. and E.N.E., a few, however, having a more northerly or N.N.W. course. They thus extend inland along the valleys of Moanataiari, Waiotahi, and Karaka Creeks from one mile to a mile and a half from the shore of the Firth of Thames. Though productive reefs are found throughout the distance named, their continuity from the low grounds of Grahamstown and Shortland Flat is broken by the occurrence of a very pronounced line of fault, which is known as the Moanataiari Fault, and the country lying to the west and east of that may be considered as constituting the two principal divisions of the field. The Moanataiari Fault has been considered to have a downthrow on the west, displacing the rocks on that side to a lower level a distance estimated at from 900 ft. to 1,000 ft. The actual amount of displacement has not been accurately determined, but the probabilities are that this is not less than here stated. The hade of the fault-line is clearly shown on its eastern wall, and is at an angle of 45°. There is also a probability that some shifting of the country on the west side took place, whereby even vertical reefs are not to be found immediately opposite their western parts on the east side of the line of fault. The fault-line is supposed to begin on the shore immediately north of where Shellback Creek enters the Firth of Thames. It is continued in a curving line, gradually acquiring a more southerly direction, through the hills and across the valleys of Shellback, Kuranui, Moanataiari, Waiotahi, and Karaka Creeks to the western base of the northern part of Una Hill, along the western lower slopes of which, with a yet more southerly trend, it is continued to Hape Creek, beyond which it cannot be said to be distinctly traceable.

"At the mouth of the gorge at Karaka Creek it is joined by another line of displacement called the Collarbone Fault. This is much more obscure. It is supposed to reach across Punga Flat into the watershed and some distance along the middle course of Tararua Creek. There is a probability of two or three faults occurring along this line, none of which are directly connected with one another. Even in Collarbone Gully itself it is not certain that a true fault is present, but only a slide of the surface rocks, which gravitating down the valley has ground along the side of the range to the east, and has produced to the depth of the moving mass a polished and slickensided wall on that side. As a slide its superficial character is easily detected, whether we look up the valley from Karaka Creek or from the saddle at the head of Collarbone Creek down the valley. The Collarbone Fault, however, is not likely to influence the speculations that are to follow.

"The Moanataiari Fault has displaced and carried to 1,000 ft. lower level the strata on its west side. The rocks thus displaced, to a large extent, have been protected from denudation, while those on the eastern side of the fault have correspondingly been subjected to that influence. It follows, therefore, that the difference is greater by the excess of denudation on the east side of the fault-line. The hilly country west of the fault is not more than 200 ft. above the sea, and that immediately east of the fault not more than 100 ft. higher; but, to make sure, let it be assumed that they are 400 ft. in height (I do not speak of the southern part of the field, where Una Hill is considerably higher). On the Grahamstown Flat some 200 ft. of rock has been removed in excess of what has been denuded from the hills west of the slide, thus discounting the disparity on the two sides of the fault by so much. On the other or east side of the fault the hills are not more than 200 ft. higher than on the west side. They have therefore, on the assumption of 1,000 ft. of displacement by the fault, hading 45°, lost one foot of height for every foot back from the slide, and a proportionately lesser amount as the slide is approached till the difference becomes nil at the actual slide itself, and the 200 ft. of loss on the Grahamstown Flat must be credited or discounted in the same way. Thus, by selecting a position for deep sinking east of the fault by so-many feet as this may chance to be from the fault-line, this measurement has to be added to the throw of the fault, and the total would represent the advantage gained, less the height above

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sea-level. It is therefore clear that not *west*, but *east*, of the fault-line deep-sinking operations should be carried on, where a saving of from 1,000 ft. to 1,300 ft. of sinking, compared with any position taken up on the west side, would be effected. As it was, however, the Queen of Beauty shaft was decided upon, the influence of the Moanataiari Slide not being taken into account.

"But on whichever side of the fault-line a deep shaft may be put down, or boring operations carried on, there has to be considered the probability of such reaching another 'plank' of country carrying payable gold. The venture must be regarded as somewhat risky, but considering the interests at stake much may be hazarded, and here it may be well to examine the evidence for and against a successful issue of such an undertaking.

"An accumulation of clastic volcanic material, such as appears over the greater part of Cape Colville Peninsula, does not readily lend itself to the distinguishment of the exact superposition of the different deposits that have taken place, and the presence of sheets of lava between this can only be of very local assistance. Nevertheless, within limited areas something like a rude stratification can be made out, and the superposition of one mass upon another determined. Hence Hutton speaks of the upper and lower parts of the whole, and Cox refers to the Tararu Creek breccias as being at the base of the whole series of accumulations. Park also, in his section from Bonemill Creek to Hape Creek, indicates a like rude succession of the rocks; and, in spite of the obscurity of the section, I have little doubt that along Tararu Creek the lowest rocks are towards the west, and the highest towards the east, near the source of the creek; and in other parts of the district of Cape Colville the andesites, taken together, are followed by trachytic rocks, including rhyolite. Locally, such superposition is not difficult to determine, even when an inconsiderable thickness of rock is concerned, but over a wider field a greater thickness of rock has to be dealt with as a single stratum, and over the whole only the great groups of rocks can be considered as indicating such an arrangement.

"It has been objected that I have dealt with the geology of Cape Colville Peninsula as though the volcanic rocks thereof were stratified deposits. If this has been so, I was quite unconscious of making any special effort in that direction; but I necessarily noted superposition where it appeared in limited sections, and the succession of the larger masses of rock over a greater field. There is no real difference in the mode of accumulation of clays and sands on the one hand and coarser volcanic *débris* on the other; and successive sheets of lava superimposed on each other are subject to the law of successive deposition, and it is only when molten masses are injected between former accumulations that this rule can be set aside. On the Thames Goldfield the general arrangement of the volcanic material indicates the lower beds in the west, and more narrowly examined the dips seem to be N.E., E., and S.E., the focus of such dip lines being a point in the Firth of Thames opposite Shortland. This may be taken to indicate the area immediately west of Shortland as the eruptive centre from whence the bulk of the material piled up to the eastward has emanated. As a matter of fact, this is a highly speculative conclusion; and in passing it may be stated that centres of eruption are hardly anywhere determinable near the Thames, or, indeed, over the entire peninsula. The only evidences in this direction are a few hardened or coarse agglomerate cores and the presence of much sinterous matter, which may be presumed to have broken out on the flanks of volcanic cones once existent in the neighbourhood, but now, through denudation, not to be distinguished from the surrounding ash and lava fields. To the west of the Thames all such evidences have been eroded away or overflowed by the waters of the sea, and it is only in the Kauaeranga Valley and in the Look-out Rocks between the upper part of Tararu Creek, the source of Karaka Creek, and the Kauaeranga that such evidences are to be met with. To meet all the requirements of the case on the supposition that the old volcanic vent was situated three-quarters of a mile west of the shore of the Firth of Thames, opposite the Town of Shortland, or the mouth of Karaka Creek, a mountain 4,300 ft. in height was a necessity in order to unite in one even grade the western slope of the imaginary mountain with the Look-out Rocks and the sinterous quartz deposits of the Otonui Valley. Excepting one-third of the slope on the eastern side, and what lies below the longer slope from the Look-out Rocks to the Firth of Thames, this mountain has been wholly removed to, and to a considerable distance below, sea-level; but while it yet had considerable mass the processes by which fissures were formed and filled with auriferous quartz must have been going on and were completed before the fracture and displacement constituting the Moanataiari Fault was formed, there being no fissures filled with reef-matter crossing this.

"After the volcano as such became extinct, thermal action continued for a long time, and there is evidence that the mountain had been considerably reduced in height and mass before the sinter deposits of the first northern tributary of the Kauaeranga were deposited. These, however, were probably the latest deposits of their kind, and post-date the formation of many of the reefs.

"By what process the reefs were formed, and whence was derived the gold now found in them, is necessarily a matter of speculation. As sensible, though minute, traces of gold are found in the solid and less-decomposed rocks of the Thames Goldfield, even at considerable distances from the reefs that traverse them, it has been thought the erupted rocks themselves are the source of the gold, and that the alterations which have taken place, ending in the production of the grey decomposed form of andesite—often described as propolyte, and as frequently called the sandstone of the miner—favoured the leaching of a portion of their silica from the rocks, and at the same time most of the contained gold, which eventually was deposited in the form of auriferous reefs in fissures previously existing, or widening and formed at the time of deposit. This action could scarcely have been set in motion and carried on by the mere access of superficial waters; and, as the rock alteration continues to a great and unknown depth, ascertained to be at least 750 ft. below sea-leval, thermal waters, no matter what their source, must be considered as largely responsible for the results.

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"It is evident that an agent more potent than the mere percolation of surface waters has operated in the decomposition of the rocks on the Thames Goldfield. And, as the uprising of deep-seated thermal waters was a fact, as testified by the presence yet of sinterous and chalcedonic quartz at Otonui and the altered and mineralised deposits of the Look-out Rocks, not to mention other evidences of thermal action, it may with safety be assumed that such was an important factor in bringing about the changes that to great depths in the crust of the earth have taken place. The rock decompositions noted and specified are thus probably referred to their actual cause, but it is yet matter of debate whether the whole or any material part of the gold was brought by thermal waters from great depths in the earth.

"A theory prevails that the gold has, as it occurs in the reefs, been mainly derived from the adjacent rocks by lateral secretion, and this, it is held, is partly proved by the fact that the undecomposed andesites forming the hard bars of the Thames Goldfield contain a percentage of gold. This percentage, however, is small; and, in opposition to the theory that the gold has come from the rocks adjacent to the same horizon at which it is found in the reefs, it is maintained that, though the rocks were leached to the last fraction of a grain of all the gold which they contain, the supply would be insufficient to equal in amount the gold that exists in the reefs. Where reefs are abundant, as at the Thames, and all more or less gold-bearing, some very richly so, the narrow bars of country that thus necessarily separate and divide them from one another could not have been the source of supply, and thus as a consequence some of the gold must have reached into the higher parts of the reef from below.

"But we have equally to determine where and what is the source of the gold that comes from below. Was this also leached from the rocks bounding the lower part of the reef fissure, the thermal pipe, or whatever other means the water had of rising from great to lesser depths in the crust of the earth? And by such means was there likely to be impoverishment of the lower parts of the reefs that may descend to such depths?

"This is the very crux of all the matters that have to be determined in connection with deep sinking at the Thames, and it must be carefully considered in all its bearings.

"It has been said that great thickness of volcanic rock, barren of quartz and gold, underlies the productive zone or plank of the Thames Goldfield west of the Moanataiari Slide; and in proof of this our attention is directed to this non-productive country both to the north and the south of the central part, and it is undeniably true that between Shellback Creek and Tararu Creek the hills abutting on the shore-line flat have not been productive of gold, and the Tararu breccias between Tararu Creek and Rocky Point show no indications whatever of the presence of reefs. Of the other or southern boundary of the field the story is somewhat similar, and beyond Hape Creek gold is said not to be present, because the rocks in that direction occupy a position considerably below or above the auriferous zone. These facts I admit, but not the inferences, in as far as they may be made applicable to the middle and richer part of the Thames Goldfield. It is perfectly true that underneath the zone of productive country that has been worked most of the reefs have become too poor to work, not yielding anything like the high returns they formerly did, and that it must be considered that for some considerable depth below the productive zone no great improvement may be expected.

"Formerly I thought that this underlying zone of poor productiveness practically barred the likelihood of deep sinking proving a success, but the further attention that I have lately been compelled to give the subject convinces me of possibilities to the contrary, and this without admitting the favourable character or the likely productiveness of the Tararu Creek breccias and overlying rocks to Shellback Creek, or even to Kuranui Creek.

"A rule is a rule, but there is no rule absolute in human experience of this sort, nor one without its exception. It has been customary to regard the breccia ash-beds of the Thames as being unfavourable country for the yield of gold in reefs which may chance to be confined between walls of this rock, and as this dictum springs from and is the result of a lengthened experience it deserves respect, and as respects ground hitherto worked it may be regarded as an approximation to the truth. But it does not apply everywhere, and it need not necessarily apply to the Thames district at deep levels, supposing the rocks in question are actually present. It has also been mooted that at no great depth below the levels now reached further sinking will have to be undertaken in slate rock. To my mind, there is little likelihood of such being the case, and the chances are so remote that I forbear to discuss the question.

"Why reefs when they pass through breccia bands should be poor in gold or without gold I am unable to say. The original magma of these breccias and the solid lava-streams with which they are associated must have been the same, and the breccias themselves show ample evidence of being none other than the material of broken-up lava-streams that have cooled at the surface. How, then, were they deprived of their gold? It is said that they contain none. Are we to suppose that all those breccias were desiccated of their gold by intense heat in the pipe-walls of a volcano? And if this did take place in part, can it be supposed that all the breccia material was treated in this way?

"The speculation is not even probable. How was the gold lost by decomposition and percolation of waters since they occupied the position in which they are now found? This is exactly what has happened to the solid lava-streams now converted to the sandstone of the miner. Altogether, I see no solution of this problem except that the breccias are in no way different, in respect of contained gold, to the decomposed lavas, both having possessed it and both having lost it. But it is a fact, reported on the best of authority, that in some parts of America breccias of this character carry reefs rich in gold, not in a solitary case, but as a characteristic of the field. There cannot therefore be a reason that the precipitating agents could not operate, or operated under unfavourable conditions. Therefore we may dismiss the rule as applying only to shallow

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depths on the Thames Goldfield, and proceed to consider the peculiar position of the bulk of the reefs at the Thames in relation to the old volcanic centre, which it has been assumed existed about a mile from the foreshore opposite Shortland.

"The strip of country N.E. and S.W. which contains the greater number of reefs, and along which they lie in the same direction, points S.W. directly to the centre of the old volcano, the position of which was not determined by the prolongation of this line, but by the convergence of the dip lines of what remains of the eastern part of the volcanic cone, which are S.E. and N.E., focussing at the point indicated. From some undetermined cause fissures and rents for thermal waters were established along the N.E. line from the crateral pipe; and, subjected to the solvent action of the heated waters, the decomposition of the andesitic rocks was effected to great depth, fissures were filled with quartz and enriched with gold in part derived from the more superficial rocks, but, for reasons already given, in part also from deeper-seated sources. But, if the deep-seated rocks were drained to supply what was deficient in the higher, it may be asked, how is it to be expected that the reefs at low levels will even approximately yield gold as rich as was met with from the surface to the 400 ft. level? To this it may be replied that the thermal waters had not their source in and from a vast cavity filled with hot water, but was collected widely from a greater breadth of rock than the waters affected by their heat and solvent action in the mid-distance of their passage to the surface, or near and at the surface. More likely it was that, from the whole heated area of the base of the mountain, thermal waters as mere oozings escaped from the rocks into a number of minute fissures and channels of lesser size than that by which the waters reached the surface; and thus, ere well started on the journey to the surface, the waters would be of a highly saline character, and when conditions were fit might deposit their burden in the upper, middle, or a yet lower part of the course by which they reached, or were forced along, if they on certain lines did not actually reach, the surface.

"There is therefore as little difficulty in supposing the presence of rich deposits at low levels as there is at higher, though the lower part of the lode would be required to be filled at a later date than the upper part. And here it may be asked, was not the auriferous store exhausted prior to the complete sealing-up of the lode fissures? The doctrine of the reopening of a lode and the introduction of fresh mineral matter of a valuable kind, which many facts prove, will be a sufficient answer to that objection. The question of favourable containing-walls has already been discussed.

"Having shown, then, the possibility, not to say the probability, of workable gold at deep levels on the Thames Goldfield, it but remains to indicate in what manner this may be best and most easily reached. Taking the displacement of the Moanataiari Fault as being approximately 1,000 ft., the downthrow being on the west side and the hade at an angle of 45°, it is clear that nowhere west of the fault-line is the position at which a prospecting-shaft or borehole should be placed. The best position would be at as low a level as would afford sufficient tip for the stuff mined, and at any moderate distance east of the fault-line.

"The amount of the downthrow on the west side of the fault would thus be avoided. I need not take into consideration the general eastern inclination of the rocks, for that is a factor scarcely affecting the case. With respect to boring on the foreshore, the same remarks apply and the same prospects are held out, provided boring to a very considerable depth is undertaken; but the chances against boring passing through a reef where all are standing at comparatively high angles makes this method of testing deep ground at the Thames somewhat risky.

"As an instance of the success of the deep penetration of payable gold into the volcanic rocks of Cape Colville Peninsula, it will suffice to mention the case of the mines at Karangahake. The Crown reef and the Woodstock and Talisman reefs have been traced, the first to the higher part and the last to the top of the mountain, which is 1,786 ft. above sea-level, and the works of the Crown Mine must now be considerably below the level of the sea; and in connection with the Woodstock, the lode promising to maintain a good show of gold, it was some time ago proposed to sink to levels that would prove the continuance of the lode through a vertical distance of more than 2,000 ft. Whether this work is being proceeded with I cannot say, but there is here sufficient evidence of the continuance of gold in depth, and what, if it be not a warrant, is at least an encouragement to prosecute the search at the Thames.

"It is true that Karangahake has been particularly favoured with respect to the natural exposure of its reefs in a vertical distance of 1,700 ft., but this fact has no bearing on the question of the penetration of the reefs and their gold-bearing quality, since did the gorge of the Waitawheta not exist the fact of the existence of the reefs had been the same. Information respecting barren zones at various levels in both the Martha, Shepherd's, and Crown reefs would be of great interest in connection with any proposal for deep sinking at the Thames. Such information has not been compiled with the care that is required in this case, but it could easily be obtained.

"The successful issue of deep prospecting at the Thames is a matter of such importance that it must form my only excuse for penning such a lengthy communication on the subject, and should this lead to right methods being adopted and carried to a successful result a great purpose will have been served."

At Coromandel mining matters were a little brighter last year than was the case for the year previous. A few good patches of gold have been got at two of the mines near the town, and this had the effect of renewing interest in mining-work in the locality. Taking the district, however, as a whole, the industry is decidedly quiet, and the necessity for the closing of the Kauri Freehold Gold Estates Company's mines and battery at Opitonui, and also of the Kapai-Vermont and Mariposa joint properties at Kuaotunu, is most unfortunate. In both cases it was found that the ore was not sufficiently rich to pay. At Opitonui the battery plant was of the most modern type, and included appliances for cyanide extraction and filter-presses; but the value of gold and silver won during the part of the year for which work was carried on was only £15,653 6s. 6d. from 16,121 tons of ore, or an average value of 19s. 5d. per ton.

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elevator. This simple appliance has solved a difficulty experienced in the early days of mining on the Shotover River, and has enabled holders of claims to sluice the bed of the river where such is wide enough to allow of the stream being temporarily diverted when the river is low.

DREDGE-MINING.

This branch of the gold-mining industry may now be said to have settled down after the excitement of the "boom." As predicted in a former report, several claims which were taken up for dredging purposes, and in some instances equipped with dredges, have been found unsuitable for this class of mining, with the result that the system of hydraulic sluicing and elevating has either been reverted to or adopted in preference to dredging. On the other hand—and entirely apart from dredging in river-beds—considerable areas of auriferous land which cannot be worked by the method of hydraulic mining, owing to the absence of a sufficient volume and pressure of water, are being successfully worked by dredges.

The following summary shows the number of dredges returned for each district at the end of the year 1902:—

District.	Working.	Standing.	Building.	Under Removal.	Wrecked.	Total.
Marlborough and West Coast	50	16	15	...	...	81
Southern ...	151	36	8	14	2	211
Totals	201	52	23	14	2	292

Owing to the number of fatal accidents which have occurred in connection with boating-work, such as is incidental to the working, moving, and coaling of dredges on deep or swift-flowing streams, it has been deemed advisable that dredgemasters should be men of experience in boating, &c. Provision was therefore made in the Mining Act Amendment Act of 1901 for the masters in charge of dredges working in such streams as may be classed by the Inspector of Mines or Warden as "deep or swift-flowing" being certificated. Certificates of service have been granted to those persons who have acted in the capacity during a given period, and all future certificates will be granted after candidates have passed the required examinations and given proof of their sobriety and general good conduct.

For general information it may be stated that up to the 31st December last the rivers and streams mentioned below have been scheduled as deep or swift-flowing streams within the meaning of the Mining Act and its amendments, and that masters of dredges working on these streams must hold certificates either of service or by examination. Some of the streams enumerated may not come within the literal meaning of the term "deep or swift-flowing" in dry weather, but in times of heavy rains are perfect torrents; hence the necessity to class them as streams of the character named.

Marlborough and West Coast District.—Wakamarina, Wangapeka, Aorere, Lower Matakitaki, Inangahua, Buller, Ahaura, Totara, Nelson Creek, Grey, Teremakau, Lower Greenstone, Hokitika, Mikonui.

Southern District.—Pomahaka, Clutha,* Kawarau, Shotover, Manuherikia (lower end only), Dart, Mataura, Waiau.

It is much to be regretted that nine fatalities occurred during the year to men employed on dredges—viz., four in the West Coast district, and five in the Southern district. Of these, two were in connection with machinery, the others being boating accidents. It is to be feared that workmen are not nearly careful enough in the use of boats, and also that many of them are not sufficiently experienced. The industry has grown so much of late years that it is not an easy matter to man all dredges with experienced hands, and a further difficulty lies in the fact that dredges in the very rapid rivers, and especially on gorge claims in those rivers, can only work during portions of the year; consequently experienced and competent men will not rely on them for employment, and more casual or less experienced men have to be engaged. I need hardly say that it is in the working of dredges so circumstanced that the greatest risks have, as a rule, to be run, and the necessity for having the most perfect safety appliances always ready for use, as well as untiring vigilance on the part of the man in charge, is obvious.

The Inspectors of Mines report that the majority of dredgemasters now appear to realise their responsibilities, and are doing their utmost to promote the safety of their employees. There are, however, exceptions yet to be found, and repeated visits of inspection have in some instances been necessary to educate such dredgemasters to a sense of their responsibilities.

It may not be out of place to remark that penalties are provided for in the case of violations of the special rules which have been framed for the promotion of safety in connection with dredge-work; also that the observance of these special rules is incumbent on employees as well as employers, and it is the duty of the latter not only to comply with the rules and regulations themselves, but to enforce compliance by the former.

* This river is often erroneously called "Molyneux" for a portion of its course.

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In regard to the class of boats for use in conjunction with dredges working on swift-flowing streams, experience has gone to show that a boat should have considerable beam in proportion to its length, and be built with high bluff bows. This latter feature enables the boat to take plenty of sheer when attached to a line, and thus the risk of swamping is considerably reduced. It has been found necessary in some cases to condemn unsuitable boats, and to prohibit their further use. Such boats have usually been ships' boats or light craft supplied either through ignorance of the class of boat required or else on the penny-wise principle.

It sometimes happens that accidents occur to men through being caught by parts of machinery in motion, although reasonable provision is made for the fencing or guarding of exposed belts, fly-wheels, shafting, &c. These accidents, as a rule, occur whilst oiling or examining the machinery when running, also to men crossing the bucket-chain when in motion. This latter practice is distinctly prohibited by the special rules; it has been the cause of several accidents, and any workman guilty of such an act (or of any other in violation of the regulations) should at once be summoned by the dredgemaster to answer to his offence before a Court of justice. Oiling of machinery in motion should also be prohibited by the dredgemaster in charge. It may be that familiarity with danger breeds contempt for it, but this is no excuse for the ofttime reckless and foolhardy actions of workmen which have from time to time resulted not only in serious but in fatal accidents.

Construction of Dredges.

As regards dredge design and construction generally, various modifications, alterations, and improvements are being made from time to time with the object of gaining increased efficiency in both machinery and gold-saving arrangements. It is pleasing to note that in some instances the pontoons have been divided into compartments, in order to minimise the risk of sinking in the event of damage to any portion of the pontoons. The ventilation of the pontoon compartments is another feature which will be referred to and illustrated further on.

Among improvements and modifications referred to in last year's report may be mentioned the Payne and Peck patent centrifugal elevator and O'Brien's hydraulic-power dredge, both of which are to be seen at work. The first-named machine is working successfully on a number of dredges, and stacks the tailings very uniformly. In watching this elevator in action I noticed, and subsequently urged, the desirability of the tailings being conveyed to it with the least possible amount of water. There should be very little difficulty in preventing the water from reaching the elevator. The object of the elevator is to stack tailings, and not to raise water. By allowing the latter to flow on to the elevator and come within the scope of its action, power is uselessly absorbed; in fact, it is simply acting like so much brake-power on the engine. Not only is this the case, but, the water being thrown from the vanes, or "beaters," of the elevator in the form of a spray (which is more or less dense in proportion to the amount of water allowed to come into contact with the machine), the passage of fine tailings is retarded, and therefore they are not thrown as far from the dredge as would be the case if the spray were absent, the latter presenting a dense medium through which the stones, small gravel, &c., have to pass.

O'Brien's method of working dredges by hydraulic pressure through the medium of Pelton wheels has proved a practical success at Waipori and at Cardrona. Of course, it is only applicable at places where water-power is available, but, given these conditions, the system is about the most economical yet adopted, as the power employed on steam and electrically driven dredges to pump water for washing the gravels is saved entirely where the amount required can be taken from the pressure-pipes. Failing this, the water which is used for driving the Pelton wheel can be exhausted into the sluice-boxes, and so reduce the volume to be lifted. The accompanying illustrations of the La Franchi dredge at Cardrona show the system of ball-and-socket joints in the pipe-line which admits of a flexible connection between the pressure-pipes on land and the floating dredge.

Current-wheel dredges are now practically things of the past. The most modern installation was in the Clutha River below Alexandra (Otago). It is found that dredges so driven do not work steadily; they can only work in the current, and this is liable to be checked or diverted by the stack of tailings piled up by the dredge. It is proposed to drive the dredge referred to by oil-engines; in fact, one engine of this class is already driving the centrifugal pump.

Electrically driven dredges are not so general as might have been expected. The difficulties and expense attending the coaling of dredges in the gorge below Alexandra are such as would naturally lead to the adoption of an electric-power station at or near the coal-mines, if only the several dredging companies could amalgamate with such an object in view, or form a company for the supply of electric power. The Earnscleugh No. 3 dredge—one of the largest in the colony—has been put to work since the commencement of the year, and is driven by electricity generated by water-power from the Fraser River. I understand that the dredge is working satisfactorily, and that the electric plant is powerful enough to supply current for the working of more dredges.

In America, Mr. R. H. Postlethwaite, formerly of Dunedin, New Zealand, and now of the Risdon Iron and Locomotive Works, San Francisco, has done good work in connection with gold-dredging on the New Zealand system. In addition to the designing and building of steam-driven dredges, Mr. Postlethwaite has given considerable attention to the question of driving dredge machinery by electrical power, and several dredges of this class have been constructed by the firm with which he is now associated. Through the courtesy of Mr. Postlethwaite I am enabled to reproduce a drawing showing the general arrangements of one of his electrically driven dredges. A prominent feature in connection with the working is that, instead of one large motor driving the bulk of the machinery—as is generally the case on steam-dredges—every department of work has its own motor. On reference to the drawing it will be noticed that there are six motors disposed as follows:—

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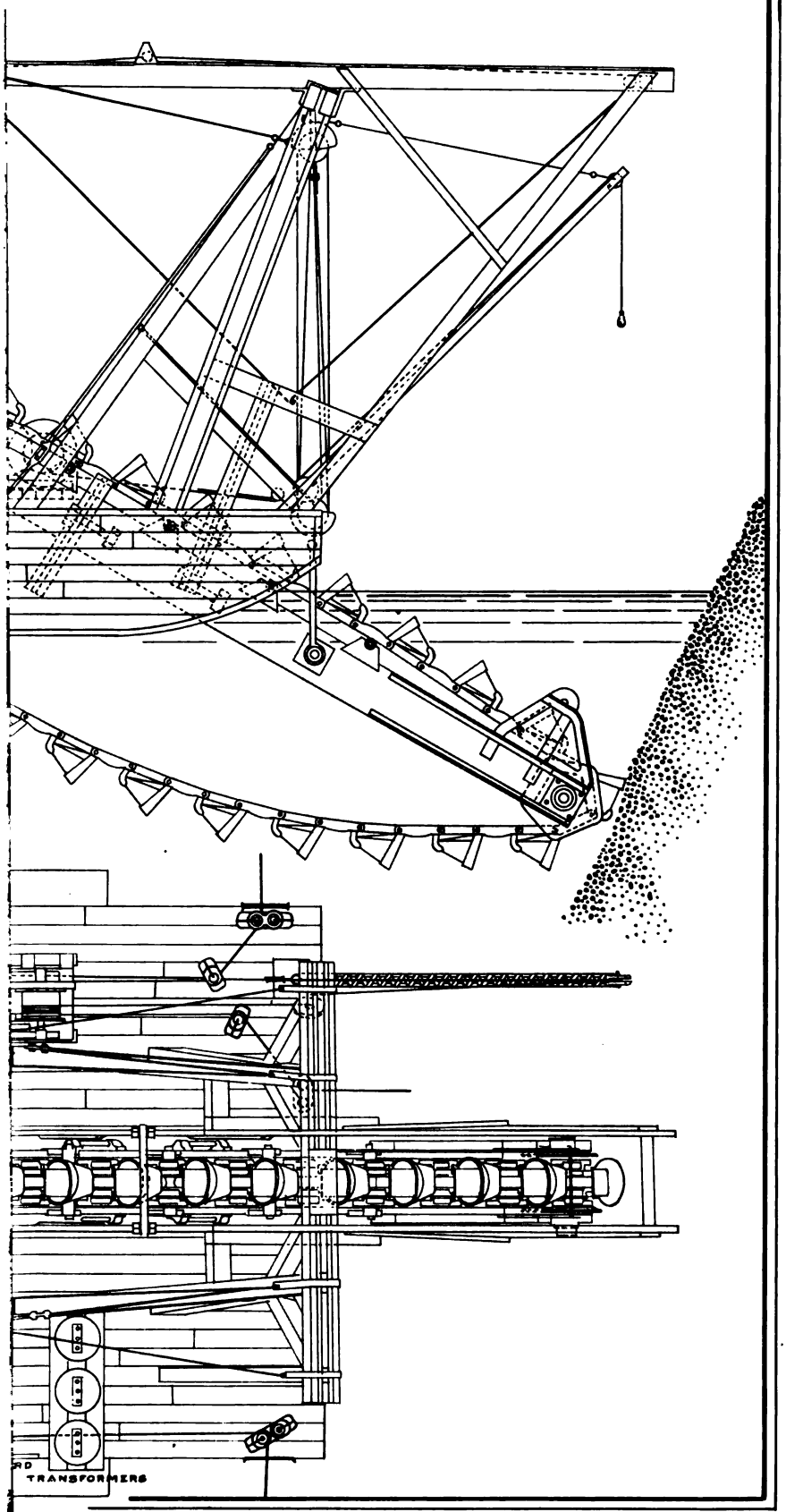
ELECTRIC POWER.

otive Works, San Francisco, Cal: U.S.A.



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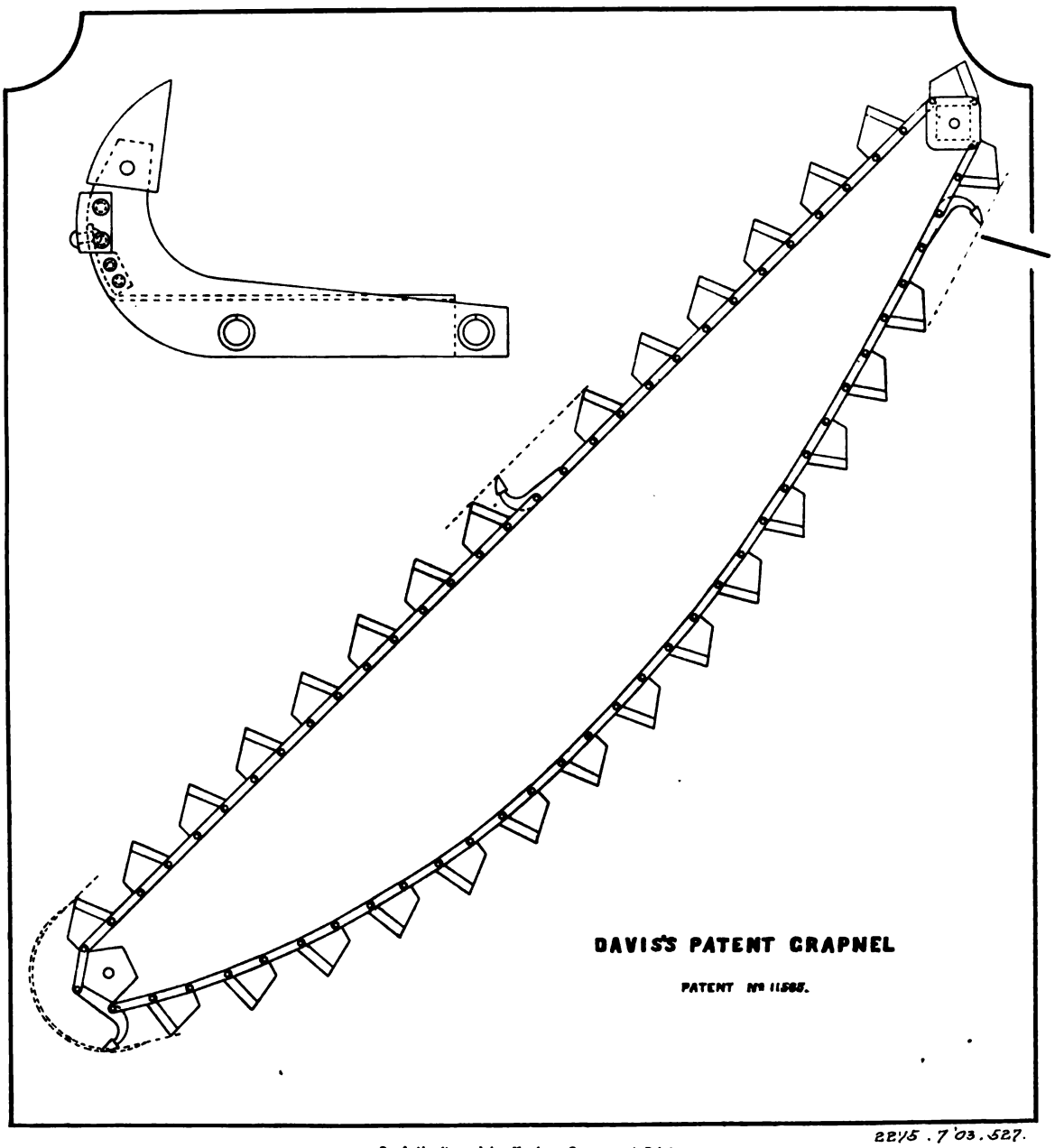
C.3.



DAVIS'S PATENT GRAPNEL

PATENT No 11565.

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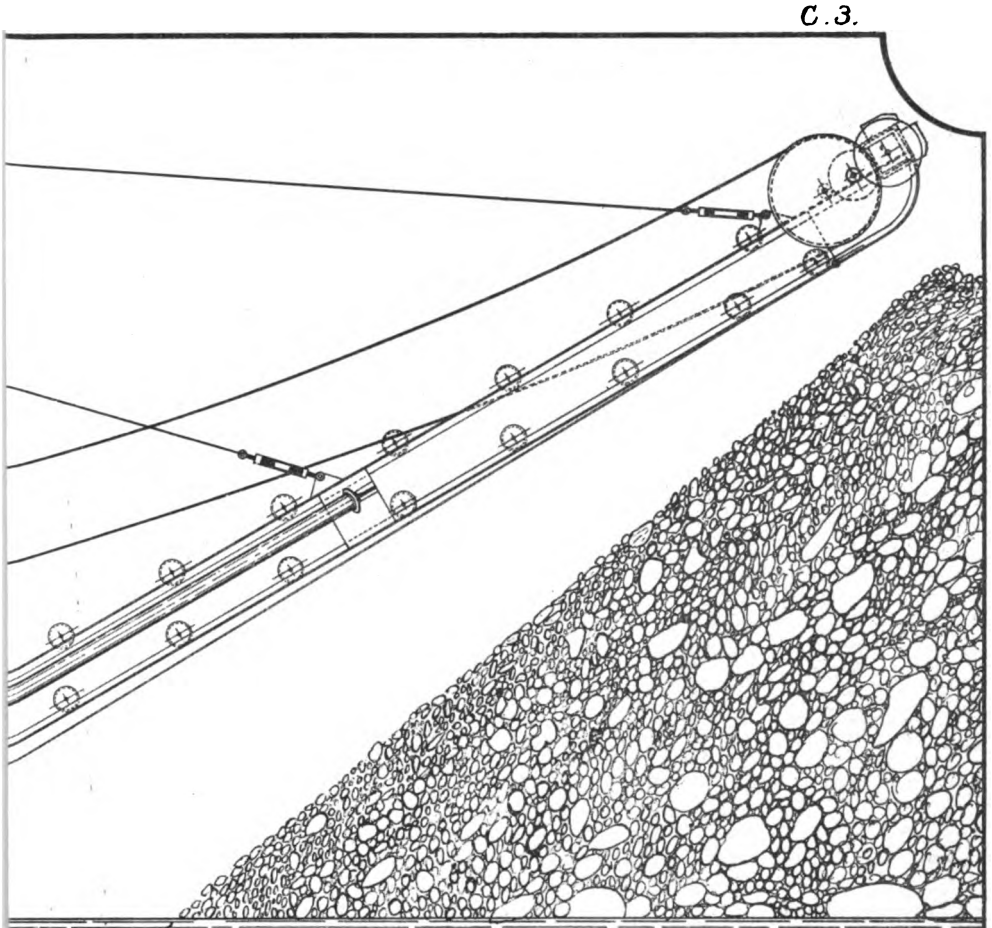
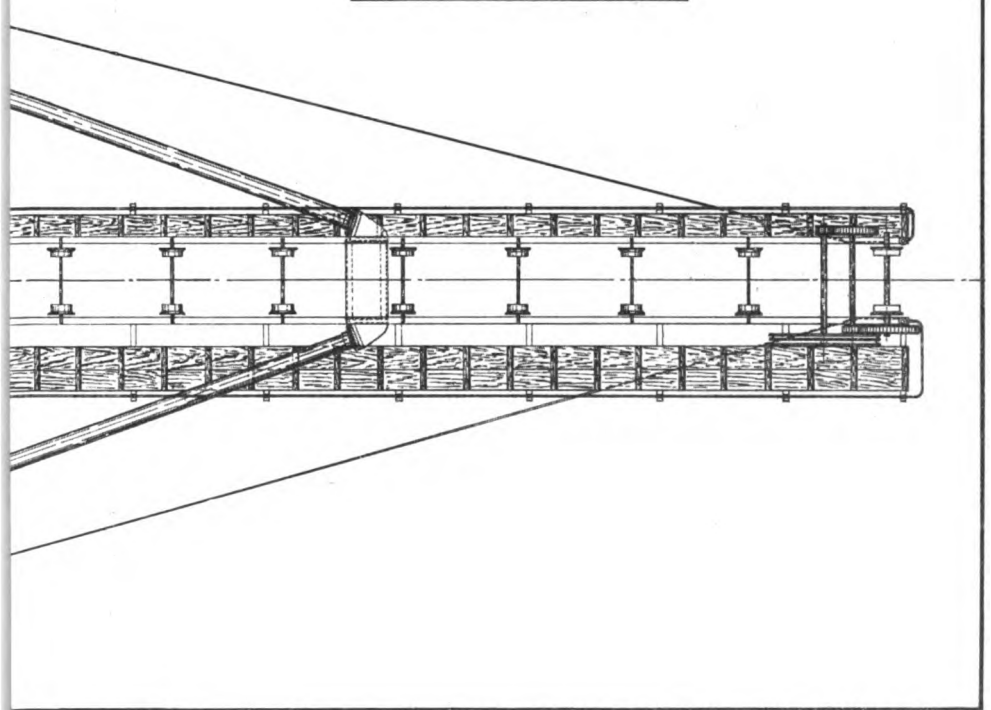


FEDDERSEN DREDGE

DESIGNED BY

CUTTEN BROS.



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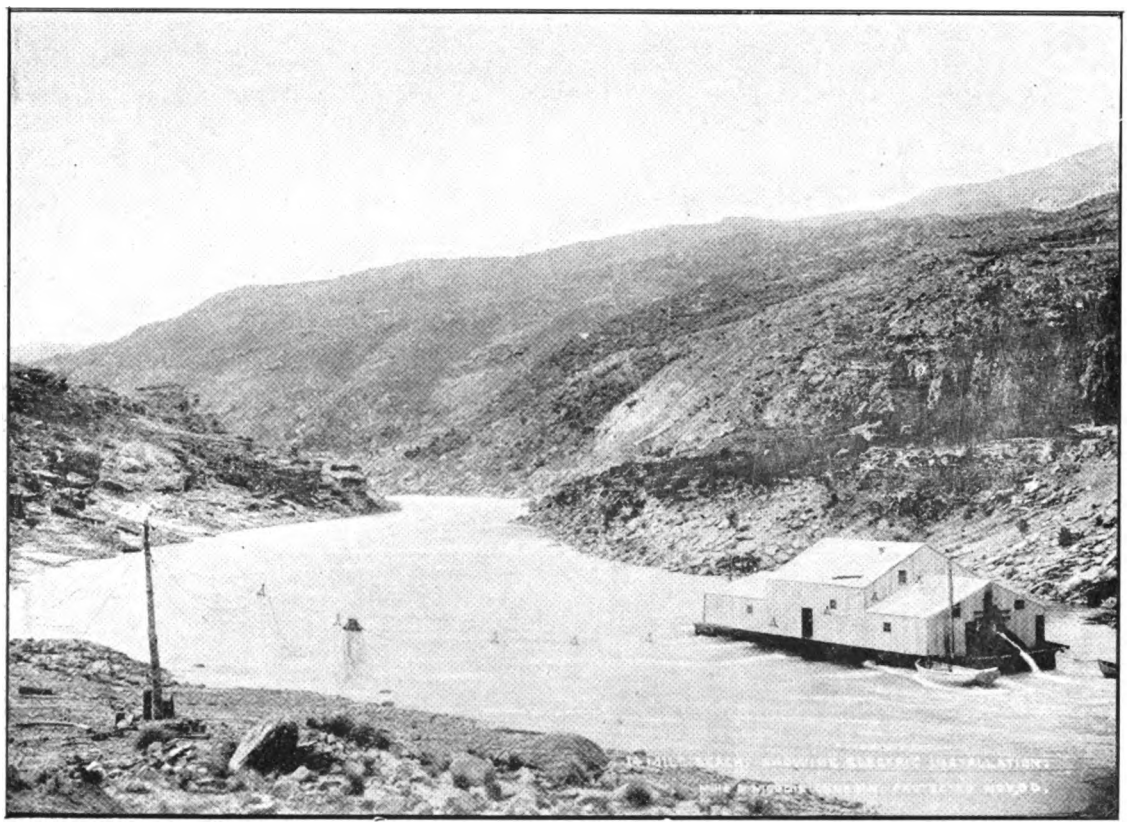
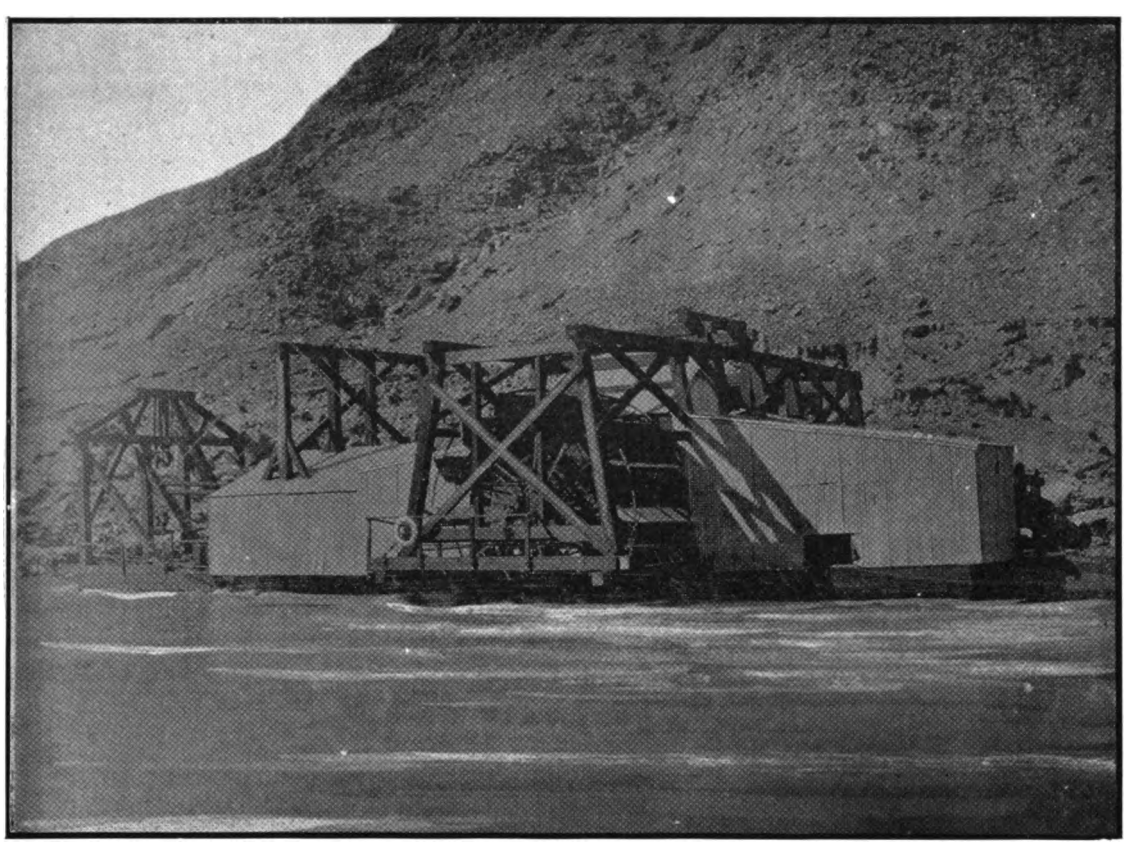


Fourteen-mile Beach Dredge, near Alexandra, Otago, showing Electric Installation.
(Muir and Moodie, photo.)



Face p. 12.]

Golden Falls Current-wheel Dredge, Clutha River, Otago.

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and are easily renewable. Thus the plates could be made thicker in the centre, where the chief wear would take place. Moreover, the plates could easily be made of manganese steel, and the holes cast in, thus saving great expense, as the flat plates would be easy to mould, the patterns leaving their own cores. There is no doubt that in any form of screening it is a distinct advantage to have a jerky motion, as may be witnessed in screening sand in a foundry or for building purposes, the operators usually giving the sieve a peculiar jerk and sometimes tossing the sand in the air during the process. In screening materials such as bonedust the circular screens require hammering to keep them clean. The polygonal screen will most effectively accomplish the above objects.

In connection with the method of Messrs. McCallum and Roberts, I may remark that some years ago it was found to be a decided advantage in the screening of coal by mechanical (shaking) screens to have bars of iron across the screen at intervals. This had the effect of causing the coal to tumble over, and any dust or slack which would otherwise have been carried, on large lumps of coal, and deposited into the wagons was thrown off and passed through the meshes of the screen. This experience is merely related to show that there is something to be gained by preventing too smooth a passage for the material which has to be screened.

The following interesting return has been compiled by the Assistant Inspector of Mines for the Southern district from information obtained principally from the several consulting engineers and builders of dredges. This return gives the leading dimensions and approximate cost or present value of a large number of dredges, the names of the designers, and also of the builders of the engines and boilers :—

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One motor driving the chain of buckets; one driving screen and elevator; one driving winch working the bucket-ladder; one driving winches for head and side lines; one driving centrifugal pumps; and one driving sand-pump for fine tailings. These arrangements will, no doubt, be viewed with interest by the several classes of persons interested in dredge design in this colony.

A recent dredge designed by Messrs. Cutten Bros., of Dunedin and Greymouth, for the Feddersen Gold-dredging Company (Limited), Three-Channel Flat, Buller River, and recently put to work, is illustrated. Its length is 86 ft., beam 29 ft., depth 7 ft. The ladder is 56 ft. long, and when at an angle of 45° is capable of dredging to a depth of 30 ft. The buckets have a capacity of 5 cubic feet each. The elevator is rope-driven, the power being applied to the top tumbler, and the tailings can be stacked to a height of 30 ft. Steam is generated in a multitubular boiler of 30 nominal horse-power. The main engines are of the compound type, rated at 16 nominal horse-power, and built by Marshall, Sons, and Co. (Limited), of Gainsborough, England. The winches are worked by a small pair of coupled vertical engines. A revolving screen is used, and the tables are covered with expanded metal above the matting. The Davis patent grapnel has been adopted on this dredge.

The Davis Patent Grapnel.—In addition to the adoption of this appliance on the Feddersen dredge just referred so, it is also in use on the following machines: viz., Kohikohi, Grey Lagoons, Stafford Waimea, Golden Bay, Amikitea, Three-mile Greenstone, Greenstone Junction, New Greenstone, Greenstone Creek, and Earnscleugh. The invention is intended to supersede the ordinary grab-hook as usually found on the bucket-chains, and the advantages claimed for the grapnel are that owing to the method of its construction it acts as a pick in loosening the face of work on which the dredge is operating, and so effects a saving in the wear-and-tear of bucket-lips. The construction of these grapnels is such that on reaching the five-sided bottom tumbler they project past the line of the bucket-lips, and tear into the tight gravels, receding within the line of the lips immediately they leave the tumbler. For comparison with the ordinary grab-hooks, it may be said that the latter are constructed to stand about 4 in. beyond the line of the bucket-lips, and in lowering the ladder the hooks are the first things to catch the drop-shute. The Davis grapnel-hooks are said to keep within the line of the lips in passing the drop-shute, and the ladder may consequently be lowered further than with the ordinary hook. An additional feature is that the Davis grapnel-hook does not project beyond the line of the bucket-lips until it reaches the five-sided bottom tumbler, and therefore does not tear up the bottom to the same extent as the ordinary hook does.

Pontoon Ventilator.—This consists of a sheet-iron casing provided with doors and attached to the ashpit of the dredge-boiler, as shown on the drawing reproduced. The ashpit is therefore connected with the inside of the pontoon through openings cut in the deck, and the draught required for the furnace of the boiler passes through the pontoons, and may be controlled from any part. The principle is really that of furnace-ventilation adapted from the method formerly common for the ventilation of coal-mines, is quite simple, and can be fitted up at small cost. Adequate ventilation of the interior of wooden pontoons is very essential.

I have to thank Mr. W. Faithful, of the firm of Cutten Bros., Greymouth, for the drawings of the Davis grapnel and pontoon ventilator.

Payne's Patent Elevator-bucket. — The following particulars and the drawings of elevator-buckets have been furnished by Mr. F. W. Payne, consulting engineer, Dunedin: Fig .A shows the patent bucket. The shoot delivering into buckets illustrates the way in which the tailings are filled into the buckets without any falling through between. It will also be noticed that the buckets open out and have plenty of freedom at top and bottom tumblers, which is a most important point. In the tray buckets, Fig. B, the illustration shows the form usually employed, and the laps of the buckets, it will be noticed, are unavoidably arranged to allow the tailings material to get in, and also leakage of water to take place. If the laps were arranged the other way it would be impossible to obtain a clear delivery over the top tumbler. In the V form of bucket shown on Fig. C the laps are necessarily the same as in the tray bucket, and an additional drawback is that the buckets close together in coming round the tumblers. This is especially objectionable in the bottom tumbler, as stones are apt to fall and roll between the top and bottom lines of buckets, and get pinched between the backs of buckets in coming round bottom tumblers. A further great advantage of the patent buckets is that, not being composed of a continuous line of buckets as in all other classes of elevator-buckets, but alternately bucket and set of links, like main buckets, they allow of the links and buckets being all bushed in the same manner as main buckets. Some of the dredges fitted with this bucket are the Dunstan Lead, Leviathan, Grey River, Olrig, and at the time of writing a leading Otago dredging company are having their original class of bucket replaced by the patent ones. From experience gained from those already in use, a great saving is effected both in ordinary wear-and-tear and in freedom from breakdowns where this bucket is used.

McCallum and Roberts's Patent Improved Screen.—The description and drawing of this invention (which is applicable to other purposes than dredging) has been supplied by Mr. Edward Roberts, consulting engineer, Dunedin. Its object is to replace the circular screens at present in use with a view to more effectual screening, and, in the case of gold-dredges, to enable the material to be more thoroughly washed. In the ordinary gold-mining circular screens the material simply lies in the hollow, rising and falling with the motion of the screen for 1 ft. or 15 in., but not turning over. To assist the stones being turned over angle irons and bars of various kinds have been tried, but with doubtful results. If these bars are made too high the stones get jammed and carried around, often damaging and sometimes destroying the sparge-pipe. The improved screen may be made hexagon shape or any other polygonal form, or corrugated or oval, as desired. The material must of necessity be turned over and shaken about, and consequently more effectively washed by the action of the water from the sparge-pipe. Another advantage this screen possesses is the fact that in the polygonal form the plates are flat and in sections, and can therefore be made any thickness,

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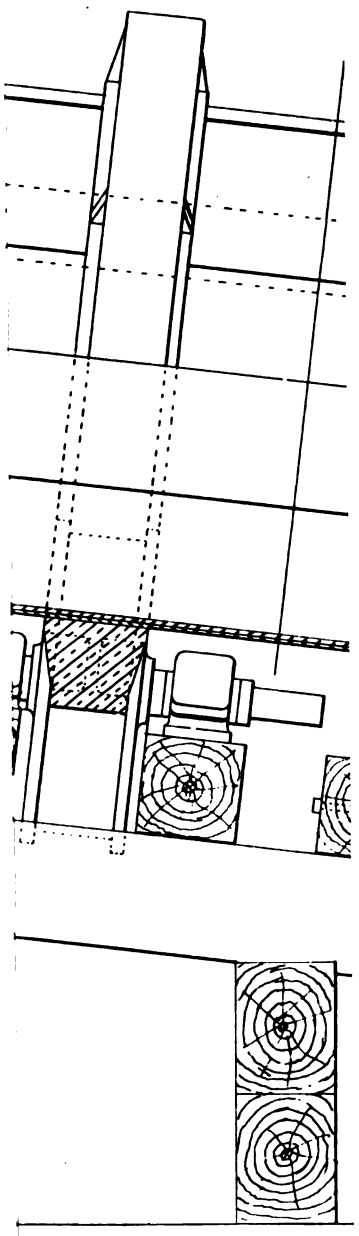

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Particulars of Dredges Built for Work in New Zealand.

M., Marshall, Sons, and Co. (Limited); G., Garratt and Sons; R., E. Roberts; T., Tangyes (Limited); C., Cutten Bros.; M. C., Morgan and Cable; P., F. W. Payne; B.M., Brown and May; R.P., Ruston and Proctor; S., Sparrow; J., Johnston; A.P., Aveling and Porter; Gy., Gwynne; Pax., Davey, Paxman, and Co.; Ro., Robey and Co.; P.S., Posthlewaite; C.S., Clayton and Shuttleworth; A., Anderson; K., Kincaid and McQueen; S.P., Stevenson and Poole.

Centrifugal elevator: (Payne and Peck's patent).

Cost-price of dredges: The prices given are mainly contract prices. In a few cases (marked "(a)") the present approximate value of the dredge is given.

Where blanks occur information not available.

Particulars of West Coast dredges include information obtainable in Dunedin.

Name of Dredge and Locality.	Dredge designed by	Whether Dredge in Active Operation or partially constructed.	Pontoons.			Ladder and Buckets.			Elevator.		Machinery.		Average Weekly Cost of working.	Approximate Cost of Dredge.	Number of Men employed.
			Length (in Feet).	Beam (in Feet).	Depth (in Feet).	Length (in Feet).	Depth of dredging at 45° (in Feet).	Capacity of Buckets (in Cubic Feet).	Length (in Feet).	Height above Water-level capable of stacking Tailings to (in Feet).	Boiler, Nominal H.P.	Engine, Nominal H.P.			
							Otago.								
Clutha River.													Oz.	£	
Scottish Chief, Tuapeka Mouth	E. Roberts	Operations suspended	91	28	6	60	35	4½	42	21	20 R.	16 M.	..	..	..
Lioness, Rankleburn	L. H. Reynolds	Shifting to Gore	89	25	6	61	40	4½	Not required		20 Ro.	16 Ro.	..	4,500	7
New Paul's Beach, below Beaumont	E. Roberts	Working	90	20	5	60	40	3½	Not required		16 M.C.	12 G.	12	1,000(a)	6
New Golden Gravel, Beaumont	"	"	91	28	6	60	35	4½	42	21	20 R.	(*7½, 11½, O.B.) G	13	5,800	9
Champion, Beaumont	"	"	91	28	6	60	35	4½	42	21	20 R.	(*9, 13, O.C.) G	10	5,800	7
New Britannia, Tallaburn	Mouat and Wales	"	98	30	6	60	38	4½	43	20	20 Ro.	16 Ro.	..	..	7
Otago No. 2, below Island Block	E. Roberts	"	110	30	7	70	43	6	42	21	35 R.	20 R.P.	..	8,200	7
Island Block, Island Block	F. W. Payne	"	105	28	7	70	45	4½	Centrifug. 4′ 6″ D. x 2′	35	20 M.	16 M.	..	6,500	7
Golden Horseshoe, Island Block	E. Roberts	Shifting to West Coast	100	30	7	70	45	5½	74	37	45 R.	20 M.	..	..	..
Gunton's Beach, above Island Block	"	Pontoons built	81	28	6	58	34	4½	42	21	16 M.	12 M.	..	..	..
Golden Run, Miller's Flat	"	Working	110	31–36	6–8	70	40	6	90	45	40 R.	25 M.	..	9,834	..
Pride of Clutha No. 2, Miller's Flat	"	"	100	31	5–7	66	48	5	74	37	28 R.	20 M.	..	7,960	7
Pride of Clutha No. 1, Miller's Flat	"	"	90	23	5	60	35	2½	..	..	..	..	..	..	..
Golden Gate, Miller's Flat	"	"	92	23	5½	62	25	3	36	18	20 R.	14 M.C.	12	3,200	7
Otago, Miller's Flat	Kincaid and McQueen	"	108	20	5	72	36	4	40	20	20 K.	12 K.	12	..	7
Golden Treasure, above Miller's Flat	Cutten Bros.	"	90	27	5	63	40	3	38	20	20 S.	16 M.	12	2,650	7
Majestic, above Miller's Flat	F. W. Payne	"	105	30	6	68	42	4½	Not required		20 M.	16 M.	13	6,200	7
Golden Bed, Ettrick	Cutten Bros.	"	101	27–32	5–7	63	35	5	110	55	40 C.	20 M.	14	9,000	7
Ettrick, Ettrick	E. Roberts	"	100	31	5–7	66	40	5	74	37	28 R.	20 M.	..	7,742	7
Gold King, below Roxburgh	"	"	113	30	6–7	82	46	5½	66	33	35 R.	20 M.	..	8,800	7
Main Lead Hercules, below Roxburgh	"	Shifting	113	30	6–7	82	46	5½	42	21	35 R.	20 M.	..	8,250	7
Endeavour, below Roxburgh	"	Working	113	30	6–7	82	46	5½	66	33	35 R.	20 M.	..	7,650	7
Roxburgh Jubilee, Roxburgh	"	"	100	32	6–7	70	50	5½	74	37	35 R.	20 M.	15	8,330	7
Lady Roxburgh, Roxburgh	"	"	113	31	7	82	50	5½	66	35	35 R.	20 M.	16	7,362	8
Teviot, Roxburgh	Cutten Bros.	"	103	30	6–7	70	40	4½	35	20	30 C.	20 M.	..	8,369	7
Molyneux Kohinoor, Coal Creek Flat	A. C. McGeorge	"	99	27	7	68	48	5	Not required		20	16	..	8,000	8
Coal Creek Flat, Coal Creek Flat	E. Roberts	"	86	27	6	58	30	4½	74	37	28 R.	(*9, 13, O.C.) G	11	7,439	7
Gold Deposit, Coal Creek to Alexandra Gorge	F. W. Payne	"	106	26	7	73	50	4½	Not required		20 T.	16 R.P.	..	6,500	7
Long Valley, Coal Creek to Alexandra Gorge	Cutten Bros.	"	100	30	6	80	48	4½	35	18	30 C.	16 M.	13	7,800	8
Golden Elbow, Coal Creek to Alexandra Gorge	F. W. Payne	Pontoons built	102	31	7	75	50	4½	Not required		20 M.	16 M.	..	..	..
Fourteen-mile Beach, Coal Creek to Alexandra G.	L. H. Reynolds	Standing	85	26	7	61	35	4½	Not required		Electric power		11	..	9

* Diameter of cylinder in inches.

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Particulars of Dredges—*continued.*

Name of Dredge and Locality.	Dredge designed by	Whether Dredge in Active Operation or partially constructed.	Pontoons.			Ladder and Buckets.			Elevator.		Machinery.		Average Weekly Cost of working.	Approximate Cost of Dredge.	Number of Men employed.
			Length (in Feet).	Beam (in Feet).	Depth (in Feet).	Length (in Feet.)	Depth of dredging at 45° (in Feet).	Capacity of Buckets (in Cubic Feet).	Length (in Feet).	Height above Water-level capable of stacking Tailings to (in Feet).	Boiler, Nominal H.P.	Engine, Nominal H.P.			
Otago—continued.															
Clutha River—*continued.*													Oz.	£	
Golden River, Coal Creek to Alexandra Gorge	E. Roberts	Working	100	27	7	72	30	5¼	Not required		28 R.	16 M.	..	6,119	8
Molyneux Falls, Coal Creek to Alexandra Gorge	F. W. Payne	"	108	30	7	70	43	4	Not required		Current-wheels, 20' D.		..	7,000	4
New River Molyneux, Coal Cr'k to Alexandra G.	E. Roberts	"	100	27	7	66	45	4¾	Not required		20 M.	16 M.	22	7,158	8
New First Chance, Coal Creek to Alexandra G.	F. W. Payne	"	95	26	7	72	37	4½	Not required		20 M.	16 M.	14	7,100	8
Bendigo, Coal Creek to Alexandra Gorge	"	Wrecked	95	26	6	72	40	4½	Not required		20 Ro.	16 Ro.	..	..	8
Sailor's Bend, Coal Creek to Alexandra Gorge	"	Working	94	26	6	62	40	4¾	Not required		20 M.	16 M.	..	6,000	8
Manuherikia, Coal Creek to Alexandra Gorge	J. C. McGeorge	"	101	27	7	78	42	5	60	35	20 M.	16 M.	..	9,480	9
Clyde (Moa No. 1), Coal Cr'k to Alexandra Gorge	E. Roberts	Standing	90	28	5	57	36	4	50	25	23 R.	12 M.	15	4,000	8
Moa No. 2, Coal Creek to Alexandra Gorge	Cutten Bros.	Working	109	31	7	78	50	5	50	25	30 C.	20 M.	..	9,059	8
Alexandra Lead, Alexandra	F. W. Payne	"	117	35	6–7	63	40	4¾	114	57	40 P.	25 M.	..	12,700	9
Molyneux Hydraulic, Alexandra	E. Roberts	"	90	27	5–6	59	30	4½	58	30	27 R.	16 M.	14	5,000	7
Alexandra Eureka, Alexandra	F. W. Payne	"	80	22	5	55	40	3	36	18	20 M.C.	12 M.	12	..	8
New Golden Beach, Alexandra	E. Roberts	"	92	28	5–6	60	35	4½	78	40	27 R.	(*9,13,O.C.) G	18	7,289	10
Ngapara Extended, Alexandra	F. W. Payne	"	105	26	7	73	50	4¾	36	18	20 M.	16 M.	..	7,250	7
Ngapara No. 1, Alexandra	"	"	74	23	5	53	30	4	Centrifugal 3½" D. x 20"	25	20 M.	12 M.	..	..	8
Enterprise No. 1, Alexandra	J. Sparrow	"	81	21	5	38	35	3	34	17	20	14	15	3,250	7
Enterprise No. 2, Alexandra	E. Roberts	"	90	30	7	66	45	4½	66	30	27 R.	(*9,13,O.C.) G	15	6,000	7
Fraser Flat, above Alexandra	F. W. Payne	Pontoons built	119	35	9	63	30	7	145	80	40 P.	25 M.	..	..	..
Earnscleugh No. 3, Alexandra	L. H. Reynolds	Working	132	30	6–7	88	50	7	121	70	Electric power		12	10,000(a)	10
Earnscleugh No. 2, Alexandra	Cutten Bros.	"	98	34	7	65	40	6½	62	31	(2) 16 M.	20 M.	23	9,500	9
Earnscleugh No. 1, Alexandra	E. Roberts	"	80	25	5	50	22	4	Centrifugal 3' 2" D. x 1' 8"	25	..	12	14	3,000(a)	8
Chicago, Alexandra		"	100	18	4	44	25	2½	35	17	..	..	11	3,000(a)	7
Sandy Point (Glasgow), Alexandra	F. W. Payne	"	100	33	7	60	36	7	82	41	40 P.	20 M.	..	..	..
Perseverance No. 1, Alexandra	Cutten Bros.	"	95	31	7	61	35	5	35	17	30 C.	20 M.	9	7,150	8
Perseverance No. 2, Alexandra	"	"	95	31	7	61	35	5	72	36	30 C.	20 M.	9	7,350	8
Dunstan Lead, below Clyde	F. W. Payne	"	112	45	9	63	42	7	120	60	40 P.	25 M.	..	14,000	8
Matau, below Clyde	Cutten Bros.	"	99	28	6	70	40	5	45	23	20 M.	16 M.	15	6,100	8
Unity, below Clyde	F. W. Payne	"	85	26	7	60	40	4½	29	14	20 M	16 M.	14	..	7
New Vincent, Clyde	Cutten Bros.	"	109	39	6	80	45	4½	45	22	20 M.	16 M.	14	5,000	7
Old Dunstan, Clyde	F. W. Payne	"	105	24	5–6	73	50	4¾	Not required		20 M.	12 M.	12	6,500	7
Davis Bend, Clyde to Cromwell Gorge	"	"	105	24	5–6	75	53	4½	Not required		20 M.	16 M.	..	6,500	8
New Leaning Rock, Clyde to Cromwell Gorge	"	"	106	26	7	84	50	4½	Not required		20 R.P.	16 R.P.	14	8,000	9
Monte Christo, Clyde to Cromwell Gorge	"	"	110	27	7	72	50	5	Not required		20 M.	16 M.	12	6,600	8
New Half-way House, Clyde to Cromwell Gorge	E. Roberts	"	100	27	7	66	40	4½	Not required		28 R.	16 R.P.	..	6,128	8
Kelly and Casey, Clyde to Cromwell Gorge	F. W. Payne	"	95	26	6	62	50	4¾	Not required		20 M.	16 M.	12	7,200	8

* Diameter of cylinders in inches.

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Particulars of Dredges—*continued.*

Name of Dredge and Locality.	Dredge designed by	Whether Dredge in Active Operation or partially constructed.	Pontoons.			Ladder and Buckets.			Elevator.		Machinery.		Average Weekly Cost of working.	Approximate Cost of Dredge.	Number of Men employed.
			Length (in Feet).	Beam (in Feet).	Depth (in Feet).	Length (in Feet).	Depth of dredging at 45° (in Feet).	Capacity of Buckets (in Cubic Feet).	Length (in Feet).	Height above Water-level capable of stacking Tailings to (in Feet).	Boiler, Nominal H.P.	Engine, Nominal H.P.			
Otago—continued.															
Clutha River—*continued.*													Oz.	£	
Great Central, Clyde to Cromwell Gorge ..	L. H. Reynolds ..	Shifting to Waikaia	90	25	6	61	35	4⅜	Not required		20 R.P.	16 R.P.	..	7,200	..
Alpine Consols, Clyde to Cromwell Gorge ..	F. W. Payne ..	Working	95	26	6	75	40	4⅜	Not required		20 M.	16 M.	14	6,000	7
Riley's Beach, Clyde to Cromwell Gorge ..	E. Roberts ..	"	105	24	7	75	46	4½	Not required		..	..	..	..	8
Alpine No. 2, Clyde to Cromwell Gorge ..	F. W. Payne ..	"	95	26	6	71	40	4½	Not required		20 M.	16 M.	14	6,000	7
Hartley and Riley, Clyde to Cromwell Gorge ..	Cutten Bros. ..	"	98	27	6–7	69	50	3⅜	39	20	20 R.P.	12 R.P.	17	5,500	9
Central Electric, Cromwell	F. W. Payne ..	"	105	26	7	73	50	4½	Not required		20 M.	16 M.	14	6,500	7
Junction Electric No. 2, Cromwell	..	"	98	23	5–6	62	50	4½	Not required		22 J.	12 M.	..	..	8
New Royal Maori, Cromwell	F. W. Payne ..	"	93	24	6	62	40	4	28	15	16 M.	12 M.	..	7,009	8
Point d'Or, above Cromwell	Stevenson and Poole	"	85	23	5	58	30	4	30	14	20 S.P.	14 S.P.	..	1,717(a)	7
Rise and Shine, above Cromwell	E. Roberts ..	"	110	33	6–7	81	50	6	66	33	35 R.	20 M.	..	9,350	10
Rising Sun, above Cromwell	F. W. Payne ..	Building	117	37	6–7	82	50	7	Centrifug. 3′ 2″ D. x 2′	30	..	..	..	..	..
Rise and Shine No. 2, above Cromwell ..	J. C. McGeorge ..	"	101	27	7	66	35	5	43	21	20	16	..	..	..
Golden Chain, Luggate	E. Roberts ..	Working	90	30	6	60	31	4½	Not required		20 M.	16 M.	..	6,128	7
Vulcan, Luggate	" ..	Pontoons built ..	81	28	6	58	31	4½	Not required		16 M.	12 M.	..	..	..
Upper Clutha, below Albertown	" ..	Working	76	26	5	49	26	4	Not required		16 M.	12 M.	..	4,500	7
Prince Albert, below Albertown	L. H. Reynolds ..	"	84	25	6	54	30	4	Not required		20 Ro.	16 Ro.	..	..	6
Kawarau River.															
Cromwell No. 2, above Cromwell	" ..	"	106	25	7	74	43	4⅜	..	..	35 Ro.	16 Ro.	..	6,494	7
Junction Electric No. 1, above Cromwell ..	J. C. McGeorge ..	Wrecked	100	27	6	72	45	5	64	32	20 M.	16 M.	..	8,000	..
Junction Electric No. 2 (late Eclipse), above Cromwell	E. Roberts ..	Re-erecting ..	100	26	7	66	40	4½	Centrifug. 3′ 2″ x 1′ 8″	20	20 R.	16 M.	..	6,000	..
Cromwell, above Cromwell	L. H. Reynolds ..	Working	106	26	7	75	50	6	Not required		20 Ro.	16 Ro.	..	6,126	9
Electric (Lady Ranfurly), above Cromwell ..	F. W. Payne ..	"	109	25	7	75	50	6	35	17	25 M.	16 M.	19	9,000	10
Electric No. 2, Kawarau Gorge	" ..	"	110	25	7	75	50	5½	..	..	30 P.	16 M.	..	8,000	9
Voltaic, Kawarau Gorge	" ..	"	105	30	6	68	42	4⅜	Not required		20 M.	16 M.	..	6,300	8
Upper Magnetic, Kawarau Gorge	" ..	"	105	27	7	76	50	4½	Not required		20 M.	16 M.	13	6,400	7
Gentle Annie, Kawarau Gorge	" ..	"	105	26	6	73	42	4½	Not required		20 M.	16 M.	..	7,700	8
Meg and Annie, Kawarau Gorge	" ..	"	105	30	6	62	45	4½	Not required		20 M.	16 M.	17	7,000	8
Grand Junction, below Victoria Bridge ..	" ..	"	105	25	7	76	52	4½	60	30	20 R.P.	16 R.P.	..	7,500	8
Kawarau Consolidated, below Victoria Bridge	" ..	Pontoons built ..	103	25	6	63	40	4	..	..	20 M.	16 M.	..	..	..
Gibbston, Gibbston	" ..	Working	105	26	7	76	50	4½	Centrifug. 3′ 2″ x 1′ 8″	20	20 M.	16 M.	..	..	7
Merrimac (now Golden Molyneux), Gibbston ..	" ..	Standing	105	30	6	68	42	4⅜	Not required		20 M.	16 M.	..	6,600	..
Kawarau Bridge (now Junction Waikaka), Gibbston	" ..	Working	105	26	7	73	50	4⅜	Not required		20 R.P.	16 R.P.	..	..	..
Morven United, above Kawarau Bridge ..	L. H. Reynolds ..	"	106	26	7	74	45	4⅜	Not required		20 M.	16 M.	..	..	7
Gold Vein, above Kawarau Bridge	F. W. Payne ..	Pontoons built ..	93	24	6	62	40	4	27	13	16 M.	12 M.	..	..	..
Morven Ferry, above Kawarau Bridge ..	" ..	" ..	93	24	6	62	40	4	28	14	16 R.P.	12 R.P.	..	..	..
Kia Ora below Frankton	" ..	Working	93	24	6	62	40	4	28	14	16 M.	12 M.	..	5,500	7

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Particulars of Dredges—*continued.*

Name of Dredge and Locality.	Dredge designed by	Whether Dredge in Active Operation or partially constructed.	Pontoons.			Ladder and Buckets.			Elevator.		Machinery.		Average Weekly Cost of working.	Approximate Cost of Dredge	Number of Men employed.
			Length (in Feet).	Beam (in Feet).	Depth (in Feet).	Length (in Feet).	Depth of dredging at 45° (in Feet).	Capacity of Buckets (in Cubic Feet).	Length (in Feet).	Height above Water-level capable of stacking Tailings to (in Feet).	Boiler, Nominal H.P.	Engine, Nominal H.P.			
Otago—continued.															
Shotover River.													£ s.	£	
Prince Arthur, Moke Creek	F. W. Payne	Working	80	20	6	58	26	4½	Sluice-box		16 M.	12 M.	..	5,400	7
Maori Point, Deep Creek	Morgan and Cable	"	84	24	5	48	24	4½	Sluice-box		20 M.C.	16 B.M.	16	..	7
Cardrona Valley.															
Lone Star, above Branch Creek	"	"	84	28	5	60	20	4½	Sluice-box		20 M.C.	16 B.M.	..	4,000	8
Lafranchi's, Cardrona Valley	E. Roberts	"	95	35	6	60	25	4½	42	21	O'Brien's water-power system		7	4,500	7
Nevis River.															
Crewe, Nevis	"	"	56	28	5	60	18	3½	34	17	16 M.	12 M.	11	3,500	7
Upper Nevis, Nevis	F. W. Payne	Shifting	75	24	5	50	14	3	35	17	..	12 M.	8	..	7
New Nevis, Nevis	Cutten Bros.	Working	60	24	5	40	20	4	40	20	16 C.	10 M.	..	..	6
Ngapara No. 2, Nevis	F. W. Payne	"	45	27	5	38	15	4	19	10	30 P.	12 M.	9½	..	7
Ngapara No. 3, Nevis	Stevenson and Poole	"	60	27	6	38	15	4	31	15	30 S.P.	16 M.	12	5,000	7
Remarkables, Nevis	Cutten Bros.	Shifting to Nevis Crossing	70	25	5	45	22	3	..	..	18 R.P.	12 R.P.	..	3,250	7
Bannockburn.															
Shepherd's Creek, Shepherd's Creek	L. H. Reynolds	Standing	62	24	6	43	22	4½	Not required		16 R.P.	12 R.P.	..	..	7
Manuherikia River.															
Manorburn, Manuherikia	..	Dismantled	75	26	3	53	31	3	Not required		16 M.	12 M.	..	..	7
Morning Star, above Alexandra	Robert Mason	Working	70	18	7	53	18	4	Not required		25 A.	20 A.	..	..	6
Olrig, Springvale	F. W. Payne	"	78	30	6	42	26	4½	35	17	20 R.P.	16 R.P.	15	5,500	8
Coronation, Galloway Flat	L. H. Reynolds	Re-erecting	80	25	6	47	25	4½	45	25	25 Ro.	16 Ro.	..	..	..
Nil Desperandum, Chatto Creek	E. Roberts	Shifting to Waikaka	65	29	8	40	22	4½	36	18	20 M.	16 M.	..	..	..
Chatto Creek, Chatto Creek	F. W. Payne	Working	65	25	6	42	23	3½	37	18	16 M.	12 M.	..	..	6
Naseby.															
Robert's Naumai, Upper Kyeburn	E. Roberts	"	87	30	7	54	31	3½	50	25	28 R.	16 M.	11	7,160	7
Cairntrodlie, Poolburn	F. W. Payne	"	60	22	5	50	26	3½	Sluice-box		14 R.P.	10 R.P.	..	..	7
Tuapeka.															
Taniwha, Tuapeka Flat	Cutten Bros.	"	60	24	4	36	16	3½	Sluice-box		16 M.	10 M.	8	2,464	7
Lawrence, Tuapeka Flat	"	"	66	30	3	25	12	3	Sluice-box		16 A.P.	12 A.P.	10	..	7
Reliance, Tuapeka Flat	Cutten Bros.	"	78	25	5	42	22	3½	Sluice-box		14 M.	12 M.	14	3,650	7
Tuapeka, Tuapeka Flat	"	"	60	24	5	36	16	3½	Sluice-box		16 M.	12 M.	12	2,515	7
Gabriel, Tuapeka Flat	"	"	70	24	4	46	23	3½	Sluice-box		16 M.	12 M.	9	4,478	7
Happy Valley, Wetherstone's	"	"	68	25	5	42	20	3½	Sluice-box		16 R.P.	12 R.P.	10	4,300	7
Imperial Waitahuna	Morgan and Cable	"	72	25	5	38	20	4½	Sluice-box		20 M.C.	16 B.M.	..	3,000	7
Havelock, Waitahuna	Stevenson and Poole	"	70	24	6	45	..	..	Sluice-box		16 M.	12 M.	..	3,100	..
Gordon, Waitahuna	Morgan and Cable	"	70	25	5	48	23	4½	Sluice-box		20 M.C.	16 B.M.	..	3,000	7
Manuka, Waitahuna	..	"	71	19	5	39	16	3½	Sluice-box		16 S.	15 S.	7	500[a]	7
Waitahuna Gully, Waitahuna	F. W. Payne	"	69	26	6	48	20	3½	Sluice-box		12 M.	10 M.	8	4,000	7
Gold Bank, Glenore	..	"	90	24	6	65	35	2½	30	14	20 P.S.	14	9	..	7
Stirling, Glenore	E. Roberts	"	80	24	6	65	35	4½	30	14	20 M.	16 M.	10	..	8

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Particulars of Dredges—*continued.*

Name of Dredge and Locality.	Dredge designed by	Whether Dredge in Active Operation or partially constructed.	Pontoons.			Ladder and Buckets.			Elevator.		Machinery.		Average Weekly Cost of working.	Approximate Cost of Dredge.	Number of Men employed.
			Length (in Feet).	Beam (in Feet).	Depth (in Feet).	Leng (in Feet).	Depth of dredging at 45° (in Feet).	Capacity of Buckets (in Cubic Feet).	Length (in Feet).	Height above Water level capable of stacking Tailings to (in Feet).	Boiler, Nominal H.P.	Engine, Nominal H.P.			
Otago—continued.															
Waipori River.													Oz.		
Bakery Flat, Upper Waipori	J. T. Johnston	Building	84	20	5	52	22	3½	Sluice-box		Johnston's Pat. Hydr.		..	..	..
New Jutland Flat, Upper Waipori	W. O'Brien	Working	86	26	6	56	20	5	Sluice-box		O'Brien's Patent Hydr.		6	..	7
Quilter and party, Waipori	"	"	51	20	3	36	20	2½	Sluice-box		O'Brien's Patent Hydr.		4	..	4
Upper Waipori, Waipori	Kincaid and McQueen	"	90	20	5	65	25	4	Sluice-box		14 S.	10 M.	14	..	8
Waipori Consolidated, Waipori	L. H. Reynolds	"	66	24	5	42	20	3	Sluice-box		O'Brien's Patent Hydr.		6½	..	7
Perseverance (McNeil's), Waipori	Cutten Bros.	"	71	22	5	45	22	3	Sluice-box		16 M.	10 M.	..	..	6
Empire No. 1, Waipori	Morgan and Cable	"	72	25	5	45	22	3½	Sluice-box		16 M.C.	12 B.M.	11	..	7
Success, Waipori	..	"	70	25	5	45	22	4	Sluice-box		14 M.	12 M.	11	..	7
Golden Shore, Waipori	..	"	78	24	5	50	28	3½	Sluice-box		25 S.	10 S.	14	2,600	7
Empire No. 2, Waipori	Cutten Bros.	"	66	24	5	42	20	3½	Sluice-box		16 M.	12 M.	11	3,150	7
Lower Enfield, Lower Waipori	L. H. Reynolds	"	66	25	6	43	21	4	Sluice-box		O'Brien's Patent Hydr.		6	4,700	7
Waipori Gold King, Berwick	E. Roberts	Standing	62	31	4	43	18	2½	Sluice box		20 A.	12 A.	..	..	..
Enfield, Verterburn	L. H. Reynolds	Working	66	25	5	43	21	4	40	28	16 Ro.	12 Ro.	9	5,655	8
Oceanic, Waipori	"	Re-erecting	71	25	5	49	28	3½	40	18	16 Ro.	12 Ro.	..	..	..
Broad Creek, Welch's Flat	Cutten Bros.	Standing	84	25	5	54	30	3	43	20	16 C.	12 M.	..	..	..
Shag River.															
Inch Valley, Inch Valley	E. Roberts	Working	76	25	5	48	35	4½	45	20	16 M.	12 M.	10	3,398	7
Inchdale, Inch Valley	Cutten Bros.	"	72	25	5	42	20	3½	45	20	16 M.	12 M.	..	4,950	7
Dunback, Dunback	"	Shifting to Waimumu	66	25	5	42	20	3½	Sluice-box		14 M.	12 M.	..	3,900	..
Pomahaka River.															
Greenvale, Pomahaka	..	Standing	90	20	4	62	35	..	Sluice-box		20 A.	12 A.	..	..	..
Ardmore, Pomahaka	..	Working	66	..	3	47	22	2	Sluice-box		6 h.p.	portable, K.	..	..	..
Taieri River.															
First Taieri, Rock and Pillar	E. Roberts	Dismantled	56	24	4	35	20	2½	Sluice-box		16 M.	10 M.	..	..	..
Southland.															
Mataura River.															
Two Creeks, Edendale	E. Roberts	Standing	81	28	6	60	28	4½	Sluice-box		20 R.	12 M.	..	..	7
Mataura Consolidated, Mataura Island	..	"	71	21	5	55	25	2	Sluice-box		16	26	9	..	7
Central Mataura No. 1, Gore	..	Working	90	24	7	68	27	3½	Sluice-box		25 A.	20 A.	..	..	..
Graham and party, Gore	Owners	Building	70	24	5	45	25	3	Sluice-box		12 h.p.	portable	..	..	..
Waikaka River.															
Sheddon's Freehold, Waikaka Valley	C. L. Watt	Working	80	25	6	56	25	4	Sluice-box		20	16	10	5,600	7
Waikaka Syndicate, Waikaka Valley	D. Sherriff	"	81	25	5	56	25	4	Sluice-box		16 M.	12 R.P.	..	..	..
Sheddon and King's, Waikaka Valley	Morgan and Cable	Re-erecting Victoria, Waimumu	80	25	5	56	30	4¼	Sluice-box		20 M.C.	16 B.M.	..	..	..
Lilliesleaf, Waikaka Valley	..	Working	60	21	5	50	25	2¾	Sluice-box		16 M.	12 M.	11	..	..

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PARTICULARS OF DREDGES—*continued.*

Name of Dredge and Locality.	Dredge designed by	Whether Dredge in Active Operation or partially constructed.	Pontoons.			Ladder and Buckets.			Elevator.		Machinery.		Average Weekly Cost of working.	Approximate Cost of Dredge.	Number of Men employed.
			Length (in Feet).	Beam (in Feet).	Depth (in Feet).	Length (in Feet).	Depth of dredging at 45° (in Feet).	Capacity of Buckets (in Cubic Feet).	Length (in Feet).	Height above Water-level capable of stacking Tailings to (in Feet).	Boiler, Nominal H.P.	Engine, Nominal H.P.			
Southland—continued.															
WAIKAKA RIVER—*continued.*													Oz.	£	
Waikaka, Waikaka	Mouat and Wales ..	Working	78	26	7	42	20	4¼	Sluice-box		20 M.C.	16 B.M.	..	..	7
Gleniti, Waikaka	E. Roberts ..	Standing	71	23	5	..	..	4¼	Sluice-box		..	..	..	..	..
Paterson's Freehold, Waikaka	J. C. McGeorge ..	Working	80	25	6	52	25	4	Sluice-box		16 M.	12 M.	..	..	9
Paterson's No. 2, Waikaka	L. H. Reynolds ..	Re-erecting ..	82	25	6	61	35	4¾	Sluice-box		20 Ro.	16 Ro.	..	..	..
McGeorge's Freehold, Waikaka	J. C. McGeorge ..	" ..	..	27	7	64	35	5	Sluice-box		16	20	..	..	..
Record, Waikaka	J. M. Walker ..	Working	65	24	3	30	16	3	Sluice-box		12 h.p.	portable, A.P.	..	..	..
Phœnix, Waikaka	E. Roberts ..	"	71	26	5	49	25	4¼	Sluice-box		16 M.	12 M.	..	3,608	7
Perry's Pioneer, Waikaka	J. R. Perry ..	"	70	24	5	24	15	3	Sluice-box		20 Pax.	16 Pax.	10	2,500	7
LITTLE WAIKAKA RIVER.															
Little Waikaka, Waikaka	..	"	66	24	3	36	11	2⅜	Sluice-box		12 A.P.	12 A.P.	7	2,000	7
Ibbotson's, Waikaka	J. R. Perry ..	"	72	24	5	42	14	3	Sluice-box		12 h.p.	portable, M.	9	2,000	7
Globe, Waikaka	..	"	84	20	5	49	23	3	Sluice-box		12 S.	10 S.	12	3,200	9
Waikaka United No. 1, Waikaka	J. C. McGeorge ..	"	80	25	6	52	25	4	Sluice-box		16 S.	12 M.	11	4,780	10
Waikaka United No. 2, Waikaka	" ..	"	80	25	6	52	25	4	Sluice-box		20 J	16 T.	..	2,670	..
Waikaka Queen, Waikaka	" ..	"	80	25	6	52	25	4	Sluice-box		16	12	..	..	..
Waikaka Forks, Waikaka	E. Roberts ..	"	56	25	5	32	18	4¼	Sluice-box		12 M.	10 M.	..	3,400	7
Lee's Steel, Waikaka	" ..	"	88	24	7	69	40	3⅜	Sluice-box		16	12	..	..	..
Ibbotson and party, Chatton	F. W. Payne ..	"	69	26	5	48	30	4	Sluice-box		16 M.	12 B.M.	..	..	..
Gold Creek, Chatton	..	Dismantled ..	70	24	3	46	20	3	Sluice-box		12	12	..	..	..
WAIMUMU STREAM.															
Waimumu Treasure, Waimumu	Morgan and Cable ..	Shifting to Waikaka	80	25	5	56	30	4¼	Sluice-box		20 M.C	16 B.M.	..	4,000	8
Waimumu Queen, Waimumu	" ..	Working	80	25	5	56	30	4¼	Sluice-box		20 M.C.	16 B.M.	..	4,000	8
Waimumu Extended, Waimumu	..	"	66	26	5	42	23	3¾	Sluice-box		14 M.	12 M.	10	..	8
Waimumu, Waimumu	Cutten Bros ..	"	78	28	5	52	30	4½	56	20	16 M.	12 M.	12	5,252	8
Royal Waimumu, Waimumu	A. and T. Burt ..	"	..	..	..	..	..	..	Sluice		..	..	..	..	..
Waimumu Central, Waimumu	Morgan and Cable ..	"	80	25	5	56	30	4¼	Sluice		20 M.C.	16 B.M.	11	4,000	8
Spec Gully, Waimumu	Cutten Bros. ..	"	68	25	5	42	20	3¾	Sluice		16 M.	12 M.	12	3,300	7
McLean's Freehold, Waimumu	" ..	"	72	25	5	42	20	3¾	Sluice		16 M.	12 M.	12	3,000	8
CHARLTON CREEK.															
MacCharlton, Charlton	..	"	81	27	6	49	20	4	Sluice		14 M.	12 M.	..	4,200	..
Charlton Creek, Charlton	Cutten Bros. ..	"	68	25	5	42	20	3¾	Sluice		16 M.	12 M.	..	3,256	7
Central Charlton, Charlton	L. H. Reynolds ..	"	55	24	5	48	16	4	Sluice		16 Ro.	10 Ro.	12	..	..
Charlton Valley, Charlton	Mouat and Wales ..	"	74	26	6	45	27	4	Sluice		16 Pax.	12 Pax.	12	3,700	9
Lady Charlton, Charlton	Cutten Bros. ..	"	78	25	5	48	25	3¾	43	21	16 M.	12 M.	12	5,000	7
WAIKAIA RIVER.															
Mystery Flat, Waikaia	Morgan and Cable ..	"	85	25	5	60	32	4¼	Sluice-box		20 M.C.	16 B.M.	..	..	
New Fairdown, Waikaia	F. W. Payne ..	Building	78	25	6	48	30	4	Sluice-box		16 M.	12 M.	..	5,000	..
Hessey's, Waikaia	Cutten Bros. ..	"	81	25	5	54	30	3¾	Sluice-box		..	..	..	..	..
Nugget, Upper Waikaia	L. H. Reynolds ..	Standing	71	25	5	49	25	4½	40	20	..	..	..	3,685	7
Muddy Creek, Muddy Creek	J. C. McGeorge ..	Working	80	25	6	52	25	4	Sluice-box		16 M.	12 M.	..	..	8
WAIAU RIVER.															
Belmont, Waiau	Mouat and Wales ..	"	84	30	5	54	30	4¼	Sluice-box		20 M.C.	16 B.M.	..	..	..

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Particulars of Dredges—*continued.*

Name of Dredge and Locality.	Dredge designed by	Whether Dredge in Active Operation or partially constructed.	Pontoons.			Ladder and Buckets.			Elevator.		Machinery.		Average Weekly Cost of working.	Approximate Cost of Dredge.	Number of Men employed.
			Length (in Feet).	Beam (in Feet).	Depth (in Feet).	Length (in Feet).	Depth of dredging at 45° (in Feet).	Capacity of Buckets (in Cubic Feet).	Length (in Feet).	Height above Water-level capable of stacking Tailings to (in Feet).	Boiler, Nominal H.P.	Engine, Nominal H.P.			
													Oz.	£	
Marlborough.															
MARLBOROUGH.															
Omdurman, Top Valley	C. E. Marchant	Standing	85	26	5	61	36	4¼	66	30	20 M.C.	16 B.M.	..	..	..
Golden Point, Wakamarina	Cutten Bros.	Working	73	25	5	48	25	3¾	32	16	16 C.	12 M.	..	3,600	..
Pride of Marlborough, Top Valley	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Imperial, Wakamarina	Cutten Bros.	Standing	68	22	5	45	20	3	37	18	12 C.	8 M.	..	..	..
Nelson.															
NELSON.															
Wangapeka, Wangapeka River	D. Sherriff..	Altering	94	30	6	62	30	4½	Centrifug.	elevator	20	16	..	..	..
Parapara, Collingwood†	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kaituna, Collingwood†	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Slate River, Collingwood†	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
West Coast.															
WESTPORT.															
Wareatea, Fairdown	E. Roberts	Standing	75	26	5	49	30	4	42	21	16 M.	12 M.	..	4,500	..
Island Creek, Fairdown	"	"	80	18	4	47	22	4	..	..	20 R.P.	12 R.P.	..	..	..
BULLER RIVER.															
Amikitia, Upper Buller	J. Bishop ..	Working	..	..	..	..	..	..	..	..	..	..	..	..	..
Kohikohi, Upper Buller	" ..	"	..	..	..	..	..	..	..	..	..	..	..	..	..
Feddersen, Three-channel Flat	Cutten Bros.	"	86	29	7	56	30	5	60	30	30 C.	16 M.	..	7,400	..
Mokoia, Three-channel Flat	"	"	92	30	7	54	28	5	62	31	30 M.	16 M.	..	7,150	..
Buller Junction, Three-channel Flat	"	"	90	27	7	54	28	5	62	31	30 C.	16 M.	..	7,400	..
Welcome, Inangahua Junction	"	"	85	29	7	54	28	4½	62	31	20 C.	16 M.	..	7,400	..
Premier, White Cliffs	"	"	85	29	7	54	28	4½	50	25	20 C.	16 M.	..	7,150	..
Rocklands, Rocklands	J. Bishop ..	"	..	..	..	..	..	..	..	..	..	..	..	..	..
Old Diggings, Berlin's	Cutten Bos.	"	..	..	..	..	..	..	..	..	..	..	..	..	..
El Dorado, Berlin's	F. W. Payne	..	108	24	6	62	40	4	..	..	..	..	..	5,000	..
BOATMAN'S.															
Reeves's Proprietary	Cutten Bros.	Working	80	25	6	56	33	3	50	25	..	..	..	5,500	..
A1	"	"	77	29	6	46	25	4½	62	31	20 C.	12 M.	..	6,200	..
GREY VALLEY.															
Greymouth Lagoons, Blackwater	"	"	90	30	7	65	39	4½	47	23	30 C.	16 M.	..	7,770	..
Grey River Consolidated, Big Grey	E. Roberts	..	84	30	7	54	25	4½	42	21	28 R.	(*9,13, O.C.) G	..	6,447	..
Waipuna, Big Grey	Cutten Bros.	..	65	29	6	34	20	3¾	29	14	20 C.	12 M.	..	4,750	..
Great Lead, Big Grey	F. W. Payne	..	82	27	6	48	30	4¾	..	..	..	..	..	6,800	..
Westland, Big Grey	"	..	89	31	6	55	42	4	35	17	20 R.P.	(*7¾, 11½, O.B.) G.	..	5,600	..
Mosquito, Mosquito Creek	McGeorge Bros.	Working	80	25	6	55	25	4	44	22	16	12	..	..	..
Shellback, Caledonia Creek	E. Roberts	"	84	27	6	58	35	4½	42	21	20 M.	12 M.	..	5,985	..
Garibaldi, Moonlight Creek	"	"	84	30	7	54	25	4½	42	21	28 R.	(*9, 13, O.C.) G	12	6,227	..
Moonlight, Moonlight Creek	F. W. Payne	"	83	31	6	48	34	4	52	26	..	..	..	5,700	..
Wellington, Moonlight Creek	..	..	84	30	7	54	25	4½	42	21	28 R.	(*9, 13, O.C.) G	..	..	..
Ruby Creek, Ruby Creek	J. Bishop ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totara Flat, Duffer's Creek	" ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Erickson's Reward, Orwell Creek	E. Roberts	Working	91	28	6	60	35	5	42	21	20 R.	(*7¾, 11½, O.B.) G.	..	6,555	..
Orwell Creek, Orwell Creek	"	..	100	31	7	66	40	4½	74	37	28 R.	(*9, 13, O.C.) G	..	7,590	..
Watterson's Consols, Ahaura River	"	Working	91	28	6	60	35	5	42	21	20 R.	(*7¾, 11½, O.B.) G.	..	..	..
Daylight, Ahaura River	Cutten Bros.	"	84	25	5	54	28	3¾	32	16	20 C.	12 M.	..	..	..
Ahaura, Ahaura River	E. Roberts	..	91	28	6	60	35	5	42	21	20 R.	(*7¾, 11½, O.B.) G.	..	6,272	..

* Diameter of cylinder in inches. † No particulars.

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Particulars of Dredges—*continued.*

Name of Dredge and Locality.	Dredge designed by	Whether Dredge in Active Operation or partially constructed.	Pontoons.			Ladder and Buckets.			Elevator.		Machinery.		Average Weekly Cost of working.	Approximate Cost of Dredge.	Number of Men employed.
			Length (in Feet).	Beam (in Feet).	Depth (in Feet).	Length (in Feet).	Depth of dredging at 45° (in Feet).	Capacity of Buckets (in Cubic Feet).	Length (in Feet).	Height above Water-level capable of stacking Tailings to (in Feet).	Boiler, Nominal H.P.	Engine, Nominal H.P.			
West Coast—continued.															
Grey Valley—*continued.*													Oz.	£	
Nelson Creek, Nelson Creek	Cutten Bros.	Working	77	29	6	46	25	4½	50	25	20 C.	12 M.	..	6,172	..
Pactolus, Nelson Creek	"	"	77	29	6	54	30	4½	50	25	20 C.	12 M.	..	6,200	..
Aldinga, Nelson Creek	F. W. Payne	"	89	31	6	55	34	4½	32	16	..	..	10	7,175	..
Victory, Nelson Creek	"	"	83	31	6	48	34	4	32	16	20 M.	16 M.	..	5,800	..
Trafalgar, Nelson Creek	E. Roberts	"	91	28	6	60	35	5	42	21	20 R.	16 R.P.	..	..	..
Callaghan's, Callaghan's Creek	Cutten Bros.	"	60	25	6	50	29	3½	33	16	16	12	..	..	..
No Town No. 1, No Town Creek	"	"	90	29	6	62	35	4½	62	31	30 C.	20 M.	..	7,500	..
Caledonia, Grey River	F. W. Payne	..	93	24	6	62	40	4	28	14	16 M.	12 M.	..	5,700	..
Ford's Creek, Ford's Creek	Cutten Bros.	Standing	85	29	7	54	30	4½	50	25	20 C.	..	..	5,600	..
No Town No. 2, No Town Creek	"	Working	98	29	6	70	45	4½	63	31	20 C.	16 M.	..	..	..
Golden Banner	F. W. Payne	..	82	27	6	48	30	4½	35	17	20 M.	16 M.	..	..	..
Red Jack's, Red Jack's Creek	Cutten Bros.	Working	74	26	6	48	26	4½	39	20	20 C.	12 M.	..	6,750	..
Maori Gully, Stillwater Creek	E. Roberts	..	84	27	6	58	35	4½	42	21	20 M.	12 M.	..	5,785	..
Kangaroo, Red Jack's Creek	J. Bishop	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Grey River, Grey River	F. W. Payne	..	85	30	6	51	32	4½	36	18	20 M.	16 M.	..	5,600	..
North Beach, North Beach	Cutten Bros.	Working	90	27	6	51	30	3½	54	27	20 C.	16 M.	..	6,500	..
Dobson No. 2	F. W. Payne	..	85	30	6	51	30	4½	36	18	20 M.	16 M.	..	5,500	..
Pactolus No. 2, Nelson Creek	E. Roberts	Working	100	32	7	70	50	4½	74	37	40 R.	20 M.	..	..	..
Saltwater Creek.															
Leviathan, Saltwater Creek	F. W. Payne	"	91	31	7	51	32	4½	53	26	40 J.	(*9, 13, O.C.) G	..	6,000	..
Leviathan Freeholds, Saltwater Creek	Cutten Bros.	"	89	29	7	55	35	4	35	15	30 C.	16 M.	..	..	..
New River.															
Maori Queen, New River	"	..	82	26	6	60	36	3½	50	25	20 C.	12 M.	..	5,000	..
Marsden No. 3, New River	"	..	78	29	5	48	25	3½	43	21	16 C.	12 M.	..	..	..
Marsden No. 1, New River	"	..	78	29	5	48	25	3½	43	21	16 C.	12 M.	..	..	..
New River, New River	J. Bishop	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cornwall, New River	A. C. McGeorge	Working	..	..	..	..	..	..	..	..	..	..	..	..	..
Teremakau and Tributaries.															
Teremakau, Teremakau River	Cutten Bros.	..	109	31	7	76	50	5	62	31	30 C.	20 M.	..	7,800	..
Greenstone Three-mile, Greenstone Creek	"	Working	77	29	7	46	25	4½	50	25	20 C.	12 M.	..	..	..
Greenstone Creek, Greenstone Creek	"	"	77	29	7	54	30	4½	50	25	20 C.	12 M.	..	6,400	..
Greenstone Gold, Greenstone Creek	L. H. Reynolds	"	88	25	6	61	37	4½	45	22	16 Ro.	12 Ro.	..	..	..
Greenstone Junction, Greenstone Creek	Cutten Bros.	"	85	29	6	60	35	4½	62	31	20 C.	16 M.	..	6,750	..
Stafford-Waimea, Waimea Creek	F. W. Payne	"	..	..	..	..	..	..	..	..	..	..	..	..	..
Hauhau Creek.															
Hauhau, Hauhau Creek	J. Bishop	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hokitika.															
Perry's Reward, Tucker Flat	E. Roberts	Under alteration	81	28	6	58	32	4½	42	21	16 M.	12 M.	..	4,000	..
Woodstock, Hokitika River	F. W. Payne	Working	107	31	8	75	45	4½	60	30	20 M.	16 M.	..	..	..
Great Woodstock, Shenandoah Creek	"	..	101	31	7	68	44	4½	42	21	20 P.	16 M.	..	..	..
Mahinapua, Mahinapua Lake	J. Bishop	Standing	..	..	..	..	..	..	..	..	..	..	..	..	..
Commissioner's Flat, Kanieri	E. Roberts	Working	105	31	7	70	43	5½	66	33	45 R.	20 M.	..	7,940	..
Hokitika River, Hokitika River	Cutten Bros.	..	103	31	7	72	35	5½	37	18	40 C.	25 M.	..	10,000	..
Hokitika Junction, Hokitika River	F. W. Payne	..	101	31	7	68	32	4½	42	21	..	..	..	6,000	..
Ross, etc.															
Totara, Totara River	Cutten Bros.	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Day Dawn, Donnelly's Creek	"	Working	82	29	7	54	30	4½	51	25	20 C.	16 M.	..	..	..
Prince of Wales, Prince of Wales	F. W. Payne	"	107	31	7	75	52	4½	60	30	40 P.	20 M.	..	7,500	..
Kohinoor, Mikonui River	J. Bishop	"	104	32	7	60	40	5½	60	32	30	20†	..	..	..
Okarito, Okarito Lagoon	G. H. McKenzie	"	..	..	..	..	..	..	..	..	..	..	..	..	..
Wanganui-Wataroa, Okarito	Cutten Bros.	"	89	27	6	52	30	3	..	..	..	..	..	..	..
Saltwater, Little Wanganui	"	..	..	..	..	..	..	..	..	..	..	..	..	..	..

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Clarendon Rock-phosphate Deposits: General View of Locality.

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ACCIDENTS AND FATALITIES.

The following statement shows the number of non-fatal accidents attended with serious personal injury which have been reported to the Department, and also the fatalities in connection with the gold-mining industry during the year :—

Class of Mining.	Northern District.		West Coast District.		Southern District.		Totals.	
	Serious.	Fatal.	Serious.	Fatal.	Serious.	Fatal.	Serious.	Fatal.
Quartz	3	2	3	...	1	...	7	2
Hydraulic and alluvial ...	No workings.		1	...	3	3	4	3
Dredging	No workings.		1	4	3	5	4	9
Totals	3	2	5	4	7	8	15	14

OTHER MINERALS THAN GOLD.

Scheelite.

Messrs. Donaldson Bros., of Golden Point, Macrae's, Otago, have separated some 40 tons during the year. The mineral occurs in the quartz, and is saved by concentration.

Cinnabar.

Further operations of a prospecting character have been carried on during the year at Waitahuna Heights, near Lawrence, Otago, but no ore has yet been sent away from the mine.

Antimony.

Operations at Alexandra, Otago, have been stopped. A trial shipment was sent to Australia, but the costs of cartage, railage, and sea freights are too great at present to admit of the claim being profitably worked.

Galena.

The lode at Preservation Inlet is not being worked. A shaft was sunk close to deep water some five years ago. The lode is, so far as it has been driven on, from 2 ft. 6 in. to 3 ft. wide, and has a hade of about 65 degrees from the horizontal. It carries galena, copper, silver, gold, &c.

The galena lode near Te Aroha (Auckland District) has recently received some attention, and a trial shipment of 50 tons is to be sent to Australia for treatment. I am informed that an assay made in Auckland gave a bullion value of £3 per ton, and over £10 per ton for lead; copper was also present, but its value is not stated.

Copper.

Although no work is being done at any of the deposits of copper-ore in the colony at the present time, there are evidences of some interest being directed towards the question. A report on the Payne-Gillies process for the treatment of copper-ores was forwarded to the Mines Department by Mr. J. W. Jaffray, engineer, 350, George Street, Sydney, New South Wales, and published in the *New Zealand Mines Record* of February last. It is possible that the report referred to may be of service to those persons who are interested in copper-ore mining, hence my reason for referring to the matter here.

Iron.

Negotiations have been commenced during the year with the object of working the ironsand-deposits of Taranaki and the ironstone at Parapara.

Petroleum.

Samples of crude oil have from time to time been obtained in the locality of Lake Brunner, between Greymouth and Otira. Boring and prospecting operations were commenced during the year with a view to determine the existence of the oil in paying quantities.

Rock-phosphate.

A discovery of this material was reported from Clarendon, Otago, in the spring of the year 1902; and since that time developments have progressed rapidly. The value of phosphate as a fertiliser is so well known and appreciated by the farming community that very little difficulty has been experienced in obtaining a market for the products, and this discovery bids fair to become of very great value to the colony.

The deposit occurs in proximity to the limestone rocks which are so abundant in the locality, and its character and value were first recognised by Mr. R. Ewing. A company known as the Ewing Phosphate Company (Limited) acquired an area of from 1,300 to 1,400 acres of freehold land embracing the best-known phosphate-deposits, and commenced operations without delay. In June last operations were commenced at Kiln Point, where there was an old lime-kiln convenient for burning, and in which this very rock had been burned under the impression that it was limestone, the quarrying and burning being discontinued owing to its supposed inferior quality. This opening enabled the company to get out large quantities of rock for treatment and placed on

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the market in time for the 1902 cereal and green crop, which have greatly benefited by the application of the prepared fertilisers. Concurrently with this, further prospecting was done in localities easy of access, and deposits of phosphate were found to exist which, when opened out, proved quite equal to the most sanguine expectations, and fully justified the laying-down of tramways, of which two lines have been constructed, meeting at a point admirably suited for central works and roasting depot. From these quarries 2,000 to 3,000 tons have already been mined, and there is a considerable quantity in sight. The rock is of an extremely hard nature, and high explosives followed by charges of blasting-powder, are necessary to successfully carry on mining operations. The overburden is not heavy, and indications point to many thousands of tons being obtained from the present workings without opening out the more extensive deposits that exist in other portions of the property, the total yield from which it is almost impossible to estimate. The supply may now be considered assured, and as the industry develops the whole colony will reap a material benefit from the discovery of this mineral in such a convenient and accessible situation. The rock, when finely ground and subjected to chemical treatment, makes an excellent superphosphate, the results from which during the past season are reported to have given satisfaction. The prepared guano from the same material has also turned out well.

Phosphate manures are largely used by farmers in New Zealand, and large quantities are imported. As the field becomes further developed and the native product better known it is quite reasonable to expect that the products of this rock will become largely used instead of the imported article. Besides this, there is the possibility of these products being exported in the future to other countries.

The photographs which are reproduced show the locality of the deposit, and also the quarrying, stacking, and roasting operations. After being roasted the rock is ground and subjected to chemical treatment.

TIMBER IN MINING DISTRICTS.

I would like to draw attention to the fact that in some of our mining centres timber for mining purposes is becoming somewhat scarce and expensive, although in other districts this condition has not yet been felt. There are large areas of land which, whilst not suited for agricultural purposes, would (judging from the fact that forests formerly existed) be available for the growth of timber.

In the Northern district especially, and also in parts of Central Otago, areas of considerable extent exist, which might, in my opinion, be utilised for forestry purposes. The kauri forests of the North, as well as those in various parts of the country from which rimu, totara, and many other timbers are obtained, are being extensively worked, and it is only a matter of time when New Zealand, in common with several other countries, will actually require timber which ought to be growing at the present time.

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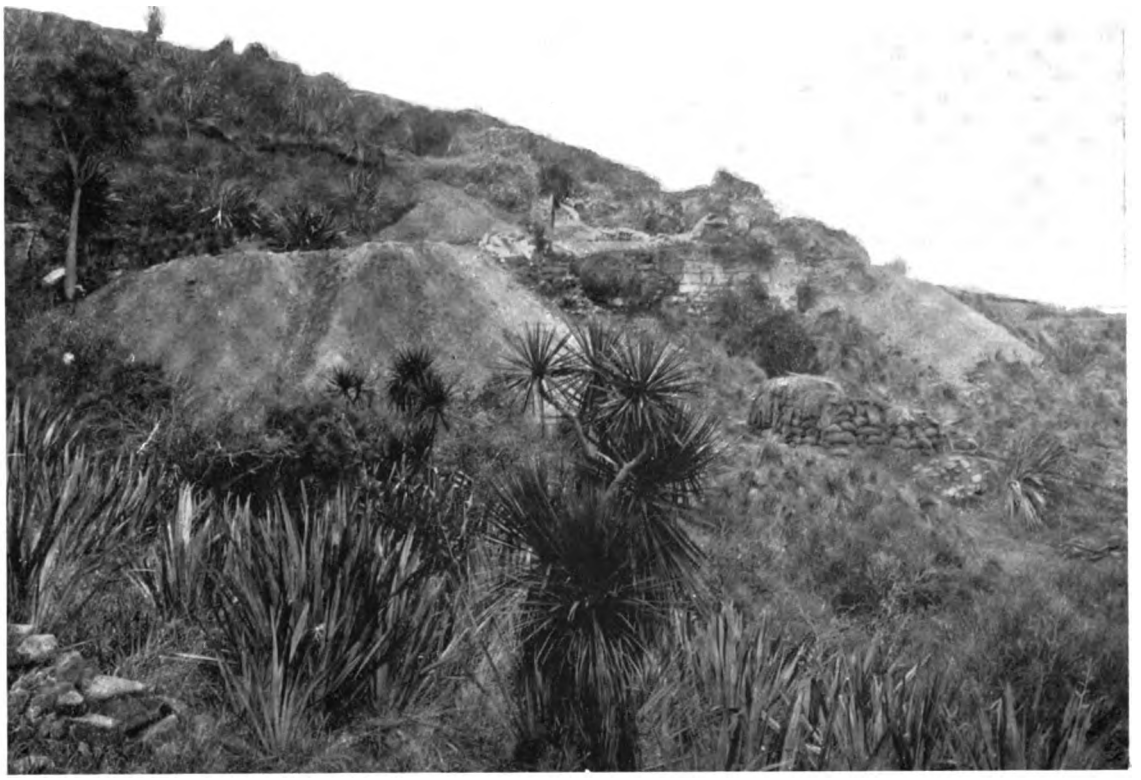

Clarendon Rock-phosphate Deposits: Kiln Point Quarry

 Clarendon Rock-phosphate Deposits: Round Hill Quarry.

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MINING PRIVILEGES.

Number and Date of License.	Area.	Locality.	Block.	Survey District.	Name of Claim.	Name of Registered Owner.
		THE HAURAKI GOLDFIELDS.				
		COROMANDEL.				
		Quartz Claims.				
	A. R. P.					
68. 12/5/96	5 2 1	Kuaotunu ..	II.	Otama ..	Handsworth ..	Louis Woodcock.
146. 28/7/96	60 0 0	Matawai ..	X.	Coromandel	Progress-Castle Rock	Progress-Castle Rock G.M. Co.
12. 5/4/97	51 2 0	Kennedy Bay	IX.	Harataunga	London	H. Teuterangi and Agnes Preece.
9. 22/3/97	93 1 28	Cape Colville	I., II.	Moehau ..	Grand Moehau Free. Synd. No. 1	Fitzgibbon Louch.
10. 22/3/97	100 0 0	"	"	" ..	Ditto No. 2 ..	"
106. 7/6/97	48 2 10	Tokatea ..	II.	Coromandel	Oriana	Hauraki Mines.
107. 7/6/97	38 0 18	" ..	"	"	Pride of Tokatea ..	"
158. 5/8/97	94 1 24	Coromandel	VI.	"	New Hauraki Gold Prop. No. 1	New Hauraki Gold Properties.
154. 5/8/97	66 0 0	"	"	"	Ditto No. 2 ..	"
161. 24/7/97	71 0 0	Kennedy Bay	X.	Harataunga	Tawera	Arthur F. Witty.
162. 24/7/97	82 0 0	"	"	"	Noko	"
22. 30/6/97	13 0 0	Coromandel	VI.	Coromandel	Ida	Joseph H. Witheford.
24. 30/6/97	25 3 16	"	V.	"	Nora	Henry Thomas Gorrie.
194. 5/8/97	98 0 0	Kikowhakarere	I.	"	British Kapanga Freehold Prop.	James Halley.
195. 5/8/97	60 0 0	"	"	"	Ditto	"
28. 15/9/97	15 1 20	Coromandel	VI.	"	Trig. Hill ..	T. Morrin, S. T. George, J. Russell, and J. M. Lennox.
125. 7/6/97	100 0 0	Opitonui ..	IV.	Otama ..	Murphy's Hill ..	Kauri Freehold Gold Estates.
187. 24/7/97	100 0 0	" ..	XII.	Coromandel	Owera	"
188. 24/7/97	100 0 0	" ..	VII., XI.	"	Hilda	"
10. 21/2/98	90 0 0	" ..	VII.	"	Castle Rock Consol. Mine No. 1.	"
11. 21/2/98	90 0 0	" ..	"	"	Ditto No. 2 ..	"
12. 21/2/98	90 0 0	" ..	"	"	" No. 3 ..	"
13. 21/2/98	90 0 0	" ..	VII., XI.	"	" No. 4 ..	"
14. 21/2/98	90 0 0	" ..	"	"	" No. 5 ..	"
15. 21/2/98	90 0 0	" ..	"	"	" No. 6 ..	"
16. 21/2/98	90 0 0	" ..	XI.	"	" No. 7 ..	"
17. 21/2/98	90 0 0	" ..	"	"	" No. 8 ..	"
18. 21/2/98	90 0 0	" ..	"	"	" No. 9 ..	"
4. 8/6/99	85 2 0	Kuaotunu ..	V.	Otama ..	Waitaia ..	Waitaia Gold-mines.
13. 6/4/99	21 1 16	" ..	"	" ..	Waitaia Extended	"
14. 6/4/99	8 3 32	" ..	II.	" ..	Juno	William Alfred Styak.
26. 8/6/99	28 0 12	" ..	V.	" ..	Great Mercury ..	Amy M. Thomson and Joseph J. Craig.
35. 6/7/99	57 2 0	" ..	"	" ..	Irene	Irene (Hauraki) Gold-mines.
44. 6/7/99	6 1 12	" ..	"	" ..	Try Fluke Ext. ..	Kuaotunu Syndicate.
45. 3/8/99	35 3 19	" ..	"	" ..	Kapai Vermont ..	"
46. 3/8/99	100 0 0	" ..	"	" ..	Try Fluke ..	"
21. 8/12/99	2 0 0	" ..	II.	" ..	Flying Fox ..	John B. Ferguson.
18. 5/7/00	35 2 8	Gumtown ..	VII.	Whitianga	Kapowai No. 2 ..	Kapowai Gold-mining Co.
43. 14/3/01	29 1 35	Kuaotunu ..	I.	Otama ..	Ocean View Ext. ..	Peter Johnson.
31. 12/2/02	15 0 0	Mahakirau ..	XV.	Coromandel	Nil Desperandum	Arthur Joseph Prescott.
46. 16/4/02	20 0 0	" ..	"	"	Day Dawn ..	"
60. 16/4/02	36 0 20	Gumtown ..	VII.	Whitianga	Rangihau ..	John Black.
100. 17/7/02	15 0 0	Kuaotunu ..	V.	Otama ..	Golden Bobs ..	John Chas. Holloway.
106. 13/8/02	32 3 29	Gumtown ..	VII.	Whitianga	Beetle Extended ..	Edward Ryan.
130. 16/10/02	15 0 0	Kuaotunu ..	V.	Otama ..	Kentish Man ..	Henry Aubrey Shaw.
41. 25/7/98	100 0 0	Tiki ..	X.	Coromando	Charley Beresford	John Lynch.
1. 9/3/99	0 1 0	Coromandel	V.	"	Pai Hauraki ..	Hauraki Freeholds.
3. 9/3/99	5 0 0	"	VI.	"	Coromandel Queen	Edward McMillan.
6. 6/4/99	5 0 0	Cabbage Bay	IX.	Harataunga	Cabbage Bay ..	George Beattie.
7. 6/4/99	5 0 0	Driving Creek	II.	Coromando	Sir George Grey ..	Daniel Leahy.
8. 6/4/99	20 0 0	Matawai ..	X.	"	Vaughan ..	Francis Danby.
17. 8/6/99	52 2 22	Coromandel	II.	"	Queen of the North	Queen of the North G.M. Co.
9. 8/6/99	5 0 0	"	"	"	Les Cotes ..	Frederick Jeune.
19. 8/6/99	10 0 0	"	"	"	Ruby	Archibald Kelso.
20. 8/6/99	18 3 0	"	V.	"	Golden Pah ..	Golden Pah (Hauraki), (Limited).
33. 6/7/99	89 1 9	Tokatea ..	II.	Coromandel	Royal Oak(Hauraki)	Royal Oak of Hauraki, (Limited).
34. 6/7/95	75 2 2	" ..	"	"	Tokatea of Hauraki	"
14A. 6/7/99	2 0 0	Kennedy Bay	"	"	Samoan	Joseph Hyde.
38. 6/7/99	28 3 11	Coromandel	V.	"	Hauraki	Hauraki Gold-mining Company.
55. 5/10/99	68 1 31	Waikoromiko	II.	"	Waikoromiko ..	John F. Goodall.
20. 2/11/99	2 0 0	"	"	"	Bismarck ..	John Dyer and G. V. Schultze.
1. 11/1/00	1 0 0	Waikanae ..	V.	Harataunga	Little Prospector ..	Augustus F. Busby.
1. 11/1/00	12 0 0	Matawai ..	X.	Coromande	Original Pohutu ..	George Baskiville.
3. 5/4/00	5 0 0	Paul's Creek	II.	"	Glencoe	J. F. McNeil and H. G. Applegate.
4. 14/6/00	5 0 0	Tiki ..	X.	"	Tiki	Thomas Cull.
5. 14/6/00	5 0 0	Driving Creek	II.	"	Star of the North	Thomas Conolly.

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MINING PRIVILEGES—*continued.*

Number and Date of License.	Area.	Locality.	Block.	Survey District.	Name of Claim.	Name of Registered Owner.
	A. R. P.					
THE HAURAKI GOLDFIELDS—*continued.*						
COROMANDEL—*continued.*						
***Quarts Claims*—continued.**						
16. 11/10/00	7 3 17	Tiki ..	X.	Coromandel	Pukewhau ..	Charles W. Hovell.
8. 11/10/00	5 0 0	..	II.	"	New Trilby ..	William Silke.
21. 1/11/00	9 3 33	Coromandel	V.	"	Hauraki Freeholds	Hauraki Freeholds.
22. 29/11/00	11 1 35	"	"	"	Hauraki No. 2 ..	Hauraki No. 2 Gold-mining Co.
9. 1/11/00	5 0 0	Driving Creek	II.	"	Mafeking ..	A. H. McNeil and G. H. Applegate.
10. 1/11/00	5 0 0	"	"	"	General White ..	George Herbert Applegate.
36. 14/3/01	20 0 0	Cape Colville	I., II.	Cape Colville	King Edward VII.	John Morrissy.
41. 14/3/01	20 0 0	Driving Creek	II.	Coromandel	Forest Queen ..	William Coulson.
81. 16/4/01	100 0 0	Matamatahara-rakeke	VI.	Harataunga	Macaronic ..	Frank Augustus Mens.
82. 16/4/01	100 0 0	Ditto ..	"	"	Macaronic Ext. ..	"
142. 13/8/01	3 0 12	Coromandel	V.	Coromandel	Bunker's Hill ..	Bunker's Hill Gold-mining Co.
196. 16/10/01	58 1 18	"	VI.	"	Poneke No. 2 ..	George Henry Boyd.
197. 16/10/01	99 2 0	"	"	"	Standard ..	"
182. 16/10/01	15 3 5	"	"	"	Poneke No. 3 ..	"
183. 16/10/01	20 0 0	Driving Creek	II.	"	Josephine ..	James Robson.
193. 16/10/01	13 2 11	Tokatea ..	"	"	West Tokatea ..	West Tokatea Gold-mines.
234. 13/11/01	14 1 1	Coromandel	VI.	"	Empress ..	Samuel Hesketh.
243. 13/11/01	24 2 30	"	V.	"	Mermaid* ..	Henry Edward Wild.
239. 13/11/01	5 0 0	Driving Creek	II.	"	Lone Hand ..	Henry Cope.
246. 12/12/01	20 0 0	Kennedy Bay	VI.	Harataunga	Gem	James Sweeney.
9. 16/1/02	20 0 0	Driving Creek	II.	Coromandel	Scotty's	Joseph Thomas Martin.
11. 16/1/02	16 1 28	Tokatea ..	"	"	New Tokatea ..	West Tokatea Gold-mines.
37. 13/3/02	5 0 0	Tiki ..	X.	"	Una	Alexander Bruce.
41. 13/3/02	8 0 0	Driving Creek	VI.	"	Magnum Bonum ..	Ragnar Henri Magnus Kemner.
49. 16/4/02	15 0 0	Kennedy Bay	II.	"	Shotover ..	Hugh Simmons.
58. 16/4/02	20 0 0	Driving Creek	"	"	Kapanga ..	William James Lavington.
68. 14/5/02	20 0 0	Coromandel	VI.	"	Sea View ..	Francis Hodge.
70. 14/5/02	20 0 0	Driving Creek	I., II.	"	South Kapanga ..	Frank W. A. Moore, Angus H. McNeil, and Ines O'Dwyer.
105. 13/8/02	17 2 0	Moehau ..	VI.	Moehau ..	Heart of Oak ..	Edward E. Noble.
107. 13/8/02	89 3 20	Waikoromiko	II.	Coromandel	New Four-in-Hand	New Four-in-Hand G.M. Co.
108. 13/8/02	63 2 24	Coromandel	VI.	"	Irvine	Edward McMillan.
109. 13/8/02	73 0 0	Waikawau ..	III.	Harataunga	Cousin Jack ..	Thomas H. Matthews.
120. 10/9/02	5 0 0	Coromandel	V.	Coromandel	La Belle Vue ..	Frederick Jeune.
121. 10/9/02	10 0 0	Waikoromiko	II.	"	New Tandem ..	William J. E. Moyle.
125. 10/9/02	7 1 5	Coromandel	V.	"	Abyssinia ..	Henry Price Hornibrooke.
132. 16/10/02	20 0 0	"	VI.	"	Try-again Southern Star	Ebenezer Pearce.
136. 16/10/02	88 2 33	"	"	"	Elsie	Charles M. Dunster.
137. 16/10/02	63 0 37	Tokatea ..	II.	"	Harbour View Syndicate	Arthur J. Prescott.
142. 12/11/02	30 0 0	Driving Creek	"	"	New Hero ..	Henry P. Hornibrooke.
147. 10/12/02	10 2 30	Tiki ..	XIII., XIV.	"	Golden Hill ..	William McQuaid.
148. 10/12/02	10 0 0	Kennedy Bay	IX.	Harataunga	Commonwealth ..	John D. Regan.
153. 10/12/02	10 0 0	"	"	"	Exalt	William F. McNeil.
PAEROA.						
93. 15/3/99	28 2 28	Waitekauri ..	X.	Ohinemuri	National ..	H. Brett, A. H. Curtis, and R. Hellaby.
94. 15/3/99	26 1 32	Komata ..	"	"	Alpha Extended ..	Ditto.
109. 15/3/99	29 1 0	" ..	"	"	Komata Extended.	Komata Reefs Gold-mining Co.
137. 12/4/99	72 1 18	Karangahake	I.	Aroha ..	Woodstock United	Woodstock Gold-mining Co.
139. 12/4/99	80 2 5	Komata ..	X.	Ohinemuri	Burbank ..	H. Brett, A. H. Curtis, and R. Hellaby.
141. 12/4/99	79 1 24	" ..	"	"	Komata Reefs ..	Komata Reefs Gold-mining Co.
205. 11/5/99	58 1 21	Waitekauri ..	XIV.	Ohinemuri	Rising Sun ..	Rising Sun Gold-mining Co.
206. 11/5/99	97 2 24	" ..	X.	"	Alpha	New Alpha Gold-mining Co.
208. 11/5/99	62 0 18	Karangahake	I.	Aroha ..	Imperial ..	Talisman Consolidated.
212. 11/5/99	80 2 2	Maratoto ..	VI.	Ohinemuri	Walker's Maratoto	Maratoto Gold-mining Co.
213. 11/5/99	79 2 15	Karangahake	I.	Aroha ..	Talisman Ext. ..	Talisman Consolidated.
263 26/4/99	30 0 0	"	"	" ..	Crown Extended ..	"
289. 25/5/99	9 2 23	Waitekauri ..	XIV.	Ohinemuri	Waitekauri ..	Waitekauri Gold-mining Co.
316. 28/6/99	61 2 37	Karangahake	I.	Aroha ..	Stanley	Woodstock Gold-mining Co.
336. 12/7/99	100 0 0	Waitekauri ..	X., XI.	Ohinemuri	Golden Cross ..	Waitekauri Gold-mining Co.
337. 12/7/99	100 0 0	" ..	X.	"	Croesus	"
338. 12/7/99	99 2 6	" ..	"	"	Socket	"
344. 28/6/99	6 3 20	" ..	X., XI.	"	California ..	"
500. 23/8/99	5 0 0	Karangahake	II.	Aroha ..	Agnes	Matthew Luscombe.
561. 23/8/99	10 0 25	"	I.	" ..	Abbey	New Zealand Crown Mines.
588. 27/9/99	99 3 4	Waitekauri ..	X.	Ohinemuri	Huanui	John McLennan.
593. 27/9/99	98 2 0	" ..	VI.	"	Waitekauri Consols	Edward Ryan.
594. 27/9/99	90 1 36	" ..	VI., VII.	"	Takapuna ..	"
597. 27/9/99	98 0 31	Karangahake	I.	Aroha ..	Crown Mines ..	New Zealand Crown Mines.
598. 27/9/99	87 0 11	"	"	" ..	Earl of Glasgow ..	"
680. 27/9/99	21 3 24	Waitekauri ..	X.	Ohinemuri	Junction ..	Waitekauri Gold-mining Co.
764. 25/10/99	85 0 29	Karangahake	I., II.	Aroha ..	Adeline Reefs ..	Talisman Consolidated.
808. 15/11/99	99 2 0	Waitekauri ..	XIV.	Ohinemuri	Jubilee	New Zealand Jubilee G.M.
872. 12/10/99	23 1 27	" ..	"	"	Laira	Charles John Stone.

* Special sea-beach claim.

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MINING PRIVILEGES—*continued.*

Number and Date of License.	Area.	Locality.	Block.	Survey District.	Name of Claim.	Name of Registered Owner.
	A. R. P.					
THE HAURAKI GOLDFIELDS—*continued.*						
PAEROA—*continued.*						
1908. 8/8/00	60 0 0	Karangahake	I.	Aroha ..	Talisman ..	Talisman Consolidated.
2400. 19/12/00	12 0 0	"	XIII. I.	Ohinemuri Aroha	Karangahake* ..	L. M. Brown, H. Gordon, and W. Tregoweth.
2403. 31/1/01	104 0 0	"	XIII., XIV.	Ohinemuri	Mammoth ..	N.Z. Crown Mines Co.
2404. 31/1/01	101 1 0	"	"	"	Hercules ..	"
2406. 31/1/01	90 0 0	"	XIII. I.	" Aroha	Ravenswood ..	"
2458. 7/2/01	99 3 36	"	XIII., XIV. I., II.	Ohinemuri Aroha	Crown North ..	Woodstock Gold-mining Co.
2501. 7/2/01	13 0 0	"	XIII.	Ohinemuri	Mackaytown* ..	Frederick Mercer Brown.
2502. 7/2/01	25 3 34	"	"	"	Mammoth Ext. ..	N.Z. Crown Mines Co.
2674. 21/3/01	61 3 4	Waitekauri ..	VI.	"	Waitekauri Rock	George Carrick.
2676. 21/3/01	78 3 35	Maratoto ..	"	"	Khartoum ..	Edwin Walter Bonwick.
2680. 21/3/01	51 1 9	Karangahake	XIV.	"	Great Britain ..	N.Z. Crown Mines Co.
2682. 27/2/01	20 0 20	Waitekauri ..	"	"	Young New Zealand	Young New Zealand G.M. Co.
2789. 11/4/01	99 1 10	Karangahake	I.	Aroha ..	Victor Waihou ..	Talisman Consolidated.
2868. 25/4/01	100 0 0	"	XIII., XIV.	Ohinemuri	Warrior	N.Z. Crown Mines Co.
2869. 25/4/01	100 0 0	"	"	"	Victoria	"
2870. 25/4/01	94 0 0	"	I.	Aroha ..	Comstock United ..	William Tregoweth and H. L. Simmons
2871. 11/4/01	19 0 26	"	I., II.	" ..	Adeline Reefs Ext.	Talisman Consolidated.
4006. 23/5/01	14 2 28	"	I.	" ..	Ravenswood Ext.	N.Z. Crown Mines Co.
4170. 25/7/01	100 0 0	Maratoto ..	VI.	Ohinemuri	Incognita ..	H. W. Dawson and J. Dickson.
4307. 22/8/01	8 3 27	Waitekauri ..	XIV.	"	Cis	William Henry Judd.
4308. 22/8/01	29 3 4	Maratoto ..	VI.	"	Fashoda ..	Edwin Walter Bonwick.
4342. 5/9/01	100 0 0	" ..	"	"	Omdurman ..	"
4383. 19/9/01	30 0 0	Komata ..	X.	"	Byron Bay ..	William Parsons.
4398. 10/10/01	85 1 20	" ..	"	"	Komata Bonanza	Komata Bonanza G.M. Co.
4399. 10/10/01	61 0 24	Maratoto ..	VI.	"	Pay-rock Consolidated	Hikutaia Gold Syndicate.
4423. 10/10/01	5 0 0	Mackaytown	XIII.	"	Nonesuch ..	George Waters.
4631. 19/12/01	94 0 14	Maratoto ..	VI.	"	Maratoto Consolidated	Hikutaia Gold Syndicate.
4728. 20/2/02	47 3 20	Komata ..	X.	"	Just-in-Time ..	T. B. Williams and E. Edwards.
4769. 20/3/02	99 0 0	Karangahake	I.	Aroha ..	Shotover ..	John Moginie Chambers.
4793. 3/4/02	89 2 0	"	"	" ..	Saxon No. 1 ..	Charles Colclough.
4645. 19/12/01	5 0 0	Waitekauri ..	XIV.	Ohinemuri	Waitekauri King ..	John James Broadbent.
4873. 8/5/02	1 0 13	" ..	"	"	Eclipse	William Henry Skene.
4901. 4/6/02	98 1 21	Karangahake	I.	Aroha ..	Saxon No. 2 ..	Hannah Mackay.
4945. 10/7/02	100 0 0	Waitekauri ..	XIV.	Ohinemuri	Birthday ..	William Morgan, sen.
5023. 18/9/02	99 2 0	Karangahake	I.	Aroha ..	Commonwealth ..	David Morton Dunningham.
5033. 9/10/02	100 0 0	Maratoto ..	VI.	Ohinemuri	Gordon	Thomas Corbett.
5034. 9/10/02	63 3 19	Komata ..	X.	"	Te-Ao-Marama ..	Komata Reefs Gold-mining Co.
5035. 9/10/02	42 1 0	Waitekauri ..	VI.	"	Waitekauri Ext. ..	Waitekauri Gold-mining Co.
5036. 9/10/02	59 3 17	" ..	X.	"	Grace Darling ..	"
5057. 6/11/02	5 0 0	Owharoa ..	XIV.	"	Falls	Robert Harvie.
5075. 3/12/02	62 0 19	Waitekauri ..	"	"	Jubilee Extended	N.Z. Jubilee Gold-mine.
5093. 17/12/02	13 3 29	Maratoto ..	VI.	"	Great Lead ..	James McGowan Loughlin.

* Special river claim.

THAMES.

Quartz Claims.

	A. R. P.					
9. 22/3/88	47 0 0	Waiokaraka, Thames	IV.	Thames ..	Queen of Beauty Extended	The Thames-Hauraki Goldfields.
31. 14/8/95	67 1 0	Thames ..	"	" ..	Deep Sinker ..	"
36. 14/9/95	90 0 0	" ..	"	" ..	Deep Levels Consolidated	"
430. 5/9/95	22 3 20	Waiotahi, Thames	"	" ..	Waiotahi ..	Waiotahi Gold-mining Co.
484. 15/2/97	100 0 0	Puriri ..	XIII.	" ..	Inverness ..	Edwin T. Dufaur and J. Russell.
485. 15/2/97	96 0 0	" ..	"	" ..	Wandoline ..	"
721. 11/9/97	68 1 0	Thames ..	IV., V.	" ..	Fortuna	Henry Rabe.
595. 16/11/97	9 1 20	" ..	IV.	" ..	New Eileen ..	New Alburnia Gold-mining Co.
601. 16/8/98	8 0 0	" ..	"	" ..	Golden Drop ..	George Fisher.
8. 17/1/99	3 3 37	Tairua ..	III.	" ..	Hikuwai* ..	Thomas Secoombe.
1. 7/2/99	21 0 20	Tapu ..	XI.	Hastings ..	Agnes	Daniel Sheridan and 4 others.
6. 7/2/99	1 0 0	" ..	"	" ..	Little Maggie ..	James McCormick.
11. 11/4/99	100 0 0	Neavesville ..	X.	Tairua ..	Chelmsford ..	Chelmsford Gold-mining Co.
21. 11/4/99	100 0 0	Puriri ..	XIII., XIII. and IV.	Thames, Tairua, Waihou	Sheet Anchor ..	William David Tilsley and John Newdick.
29. 25/4/99	50 2 21	" ..	XIII., I.	Tairua, Ohinemuri	Capstan	William David Tilsley.
31. 25/4/99	29 3 32	Thames ..	IV.	Thames ..	Kuranui-Caledonian	Kuranui-Caledonian G.M. Co.
34. 2/5/99	21 0 0	" ..	"	" ..	Nonpareil ..	William McCullough.
37. 2/5/99	100 0 0	Great Barrier Island	VI.	Fitzroy ..	Great Barrier Ext.	Barrier Reefs Gold-mining Co.
48. 6/6/99	59 0 0	Neavesville ..	III.	Ohinemuri	Minnesota ..	Mananu Gold-mining Co.
49. 6/6/99	100 0 0	" ..	"	"	New Wentworth ..	"
50. 6/6/99	92 2 37	" ..	"	"	Rapid	"
52. 6/6/99	100 0 0	Puru ..	II.	Thames ..	Russell Extended	Puru Consolidated G.M. Co.
60. 20/6/99	15 2 17	Waiotahi, Thames	IV.	" ..	Cambria ..	New Moanataiari G.M. Co.

* Opal mineral license.

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MINING PRIVILEGES—*continued.*

Number and Date of License.	Area. A. R. P.	Locality.	Block.	Survey District.	Name of Claim.	Name of Registered Owner.
THE HAURAKI GOLDFIELDS—*continued.*						
THAMES—*continued.*						
***Quartz Claims*—continued.**						
69. 4/7/99	59 2 13	Puriri ..	XIII.	Tairua ..	Miner's Right ..	George Greenaway and 3 others.
72. 4/7/99	93 2 0	Puru ..	II.	Thames ..	Russell	Puru Consolidated G.M. Co.
84. 18/7/99	30 0 0	Tairua ..	III.	Tairua ..	Star*	Walter Smith.
86. 1/8/99	20 0 0	Ohui ..	IV.	" ..	Lord Kitchener ..	Albert Terry Day and 2 others.
92. 1/8/99	94 3 26	Thames ..	"	Thames ..	Moanataiari ..	New Moanataiari G.M. Co.
93. 1/8/99	74 1 0	" ..	"	" ..	St. Hippo ..	May Queen (Hauraki).
94. 1/8/99	92 1 0	" ..	"	" ..	May Queen ..	"
95. 1/8/99	64 2 0	" ..	"	" ..	Cardigan ..	"
96. 1/8/99	99 0 0	Tapu ..	XI.	Hastings ..	Sheridan ..	Alfred Price, James Hawkes, and William Moore.
103. 15/8/99	8 2 13	Great Barrier Island	VI.	Fitzroy ..	Whangapoua ..	Barrier Reefs Gold-mining Co.
113. 5/9/99	16 0 0	Whangamata	XV.	Tairua ..	Lucky Find ..	London and N.Z. Corporation C..
125. 3/10/99	100 0 0	Tairua ..	VI.	" ..	Broken Hills ..	Tairua Broken Hills G.M. Co.
126. 3/10/99	100 0 0	" ..	"	" ..	Broken Hills No. 2	"
127. 3/10/99	69 3 24	" ..	"	" ..	Broken Hills No. 3	"
128. 3/10/99	70 3 26	" ..	"	" ..	Broken Hills No. 4	"
136. 3/10/99	5 0 0	Omahu ..	I.	Ohinemuri	Loch Naford ..	Klondike Gold-mining Co.
139. 17/10/99	100 0 0	Upper Tararu	II.	Thames ..	Vulcan	The Eclipse (Limited).
141. 17/10/99	62 2 26	Thames ..	IV.	" ..	Favourite† ..	Victoria Gold-mining Co.
142. 17/10/99	100 0 0	Tararu, Thames	II.	" ..	Eclipse	The Eclipse (Limited).
143. 17/10/99	4 3 24	Omahu ..	I.	Ohinemuri	Manawanui ..	Ruka Ngapapa.
144. 17/11/99	99 1 0	Puriri ..	XIII.	Thames and Tairua	Lucky Chance ..	Puriri Gold Estates.
152. 21/11/99	85 1 37	Omahu ..	I.	Ohinemuri	Klondike ..	Klondike Gold-mining Co.
154. 21/11/99	7 1 22	Wharekawa	VI.	Tairua ..	New Glentanner ..	Albert Bruce.
162. 23/1/00	100 0 0	Tairua ..	IX.	" ..	Essex	John Collins.
163. 23/1/00	100 0 0	" ..	"	" ..	Chelmsford Ext.	Chelmsford Gold-mining Co.
164. 23/1/00	96 1 25	Tapu ..	XI.	Hastings ..	Mahara-Royal ..	Henry Hopper Adams.
165. 23/1/00	98 0 13	" ..	"	" ..	Shannon ..	"
166. 23/1/00	99 2 22	Puriri ..	XIII.	Thames ..	New Aurarius ..	Puriri Gold Estates.
168. 6/2/00	5 0 0	Karaka, Thames	..	" ..	New Year ..	Andrew Agnew.
171. 20/2/00	2 0 0	Thames ..	IV.	" ..	Seahorse ..	John Hayes.
177. 3/4/00	37 2 36	Neavesville ..	IX.	Tairua ..	Golden Belt ..	Golden Belt Gold-mining Co.
179. 3/4/00	19 0 0	Tairua ..	V., VI.	" ..	Gem No. 2 ..	William Gorrie and 4 others.
180 20/4/00	100 0 0	Gumtown ..	VII.	Whitianga	Welcome Jack ..	Welcome Jack Gold-mining Co.
198. 19/6/00	100 0 0	" ..	"	"	Big Beetle ..	The Big Beetle Gold-mining Co.
200. 19/6/00	50 0 0	Tairua ..	X.	Tairua ..	Eureka	Charles Edward Button.
204. 3/7/00	88 2 16	Karaka Creek, Thames	V.	Thames ..	Gloucester Ext. ..	Samuel Johnson Hill and 3 others.
206. 17/7/00	78 0 0	Thames ..	IV., V.	" ..	May Queen Ext. ..	May Queen Extended G.M. Co.
208. 17/7/00	2 0 0	Tairua ..	I.	Tairua ..	Buller	Robert Stevenson.
212. 21/8/00	88 0 7	Puriri ..	XIII.	Thames ..	Moncreith ..	Puriri Gold Estates.
214. 21/8/00	4 0 3	Waiomo ..	XIV.	Hastings ..	Hector Macdonald	Robert Lowrie.
217. 4/9/00	45 0 38	Tairua ..	V., VI.	Tairua ..	Mycsotis Gem ..	William Gorrie, Geo. Cundy, and Gordon Agnew.
218. 4/9/00	100 0 0	Karaka Creek, Thames	V.	Thames ..	New Gloucester ..	New Gloucester Gold-mining Co.
222. 18/9/00	20 0 0	Tararu ..	I., IV.	" ..	Bullion	Timothy Buckley.
224. 18/9/00	94 3 0	Kauaeranga	V.	" ..	New Hauraki‡ ..	William Cobb, Robert L. Stevenson, and Ebeneser Hadrill.
230. 6/11/00	4 0 36	Waiomo ..	XIV.	Hastings ..	Baden Powell ..	James Dobson.
231. 20/11/00	9 3 24	" ..	"	" ..	Victory	James Miller.
233. 20/11/00	100 0 0	Wairoa ..	"	Wairoa ..	Manakau‖ ..	James Thomson.
237. 4/12/00	50 0 0	Puru ..	XV.	Hastings ..	Eaglehawk ..	Archibald Campbell.
238. 4/12/00	12 0 30	Tairua ..	"	Tairua ..	Triangle	The London and New Zealand Exploration Co.
241. 18/12/00	100 0 0	Great Barrier Island	VII.	Fitzroy ..	New Aotea ..	Andrew Manfred McMahon.
244. 22/1/01	80 0 0	Ditto ..	"	" ..	Barrier Reefs ..	Barrier Reefs Gold-mining Co.
245. 22/1/01	53 2 25	Kirikiri ..	IX.	Tairua ..	Charlcote ..	James Thomson.
249. 22/1/01	29 0 14	Puriri ..	XIII.	" .	Union Jack ..	John McInnes.
250. 22/1/01	100 0 0	Tairua ..	XV.	" ..	Luck at Last ..	The London and New Zealand Exploration Co.
251. 22/1/01	100 0 0	" ..	..	" ..	Luck at Last Ext.	Ditto.
252. 22/1/01	94 0 17	" ..	"	" ..	Wharekawa ..	"
259. 5/2/01	21 1 29	Otanui, Thames	V.	Thames ..	Shamrock ..	James William Hirst.
267. 19/2/01	1 0 28	Hape Creek, Thames	"	" ..	Summerhill ..	Jeremiah Sullivan and Patrick Fogarty.
270. 5/3/01	5 0 0	Lower Tararu	I.	" ..	Kopu	Joseph Cornwell Williams.
273. 19/3/01	82 0 3	Otanui, Thames	V.	..	Otanui Consols ..	James William Hirst.
274. 19/3/01	75 2 20	Thames ..	IV., V.	" ..	Thames Talisman	Thames Talisman G.M. Co.
278. 23/4/01	56 3 0	Ohui ..	IV.	Tairua ..	Waihui	Waihui Gold-mining Co.
279. 23/4/01	4 1 0	Waiomo ..	XI.	Hastings ..	Duke of Cornwall	Frederick Lowrie.
280. 7/5/01	80 0 0	Tairua ..	VI.	Tairua ..	Taniwha ..	Taniwha Gold-mining Co.
281. 7/5/01	46 0 20	" ..	IX., X.	" ..	Chelmsford Reefs	Peter Macfarlane and Kauri Timber Co.
282. 7/5/01	99 0 15	" ..	VI.	" ..	Broken Hills No. 5	Tairua Broken Hills G.M. Co.
284. 7/5/01	5 0 0	Whangamata	III.	Ohinemuri	Venture	Benjamin Anderson and 6 others.

* Opal mineral license. † Special foreshore claim. ‡ Cinnabar mineral license. ‖ Mineral license.

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MINING PRIVILEGES—*continued.*

Number and Date of License.	Area. A.	R.	P.	Locality.	Block.	Survey District.	Name of Claim.	Name of Registered Owner.
THE HAURAKI GOLDFIELDS—*continued.*								
THAMES—*continued.*								
***Quarts Claims*—continued.**								
286. 4/6/01	99	3	25	Neavesville	IX.	Tairua ..	Fulminate ..	Robert John Farrell.
288. 4/6/01	73	1	10	Thames ..	IV.	Thames ..	New Whau ..	New Whau Gold-mining Co.
289. 4/6/01	41	3	10	" ..	"	" ..	Victoria	Victoria Gold-mining Co.
294. 9/7/01	100	0	0	Tararu ..	II.	" ..	Eclipse Extended	William Thompson McGregor.
296. 23/7/01	5	0	0	Tapu ..	XI.	Hastings ..	Final Flutter ..	George Hunter and W. C. Kelly.
301. 20/8/01	54	2	0	Thames ..	IV.	Thames ..	New Alburnia ..	New Alburnia Gold-mining Co.
302. 20/8/01	69	1	7	Tararu ..	"	" ..	Creek	Agnes Graham Trower.
303. 20/8/01	90	0	12	" ..	"	" ..	Tararu	"
304. 20/8/01	7	1	0	Thames ..	"	" ..	Little Mabel ..	Charles Longhurst.
306. 3/9/01	93	2	0	" ..	"	" ..	Thames Reefs ..	Joseph James Macky.
307. 17/9/01	37	0	0	Tairua ..	VI.	Tairua ..	Broken Hills No. 6	Tairua Broken Hills G.M. Co.
312. 19/11/01	64	0	0	" ..	"	" ..	Tairua	Thomas Atherton Ashton.
313. 19/11/01	30	0	0	Waiomo ..	XIV.	Hastings ..	Gem and Crown ..	Monowai Gold-mines.
315. 19/11/01	0	1	35	Thames ..	IV.	Thames ..	Pump	Henry Andrew Gordon and 2 others.
317. 3/12/01	88	2	0	Tararu ..	"	" ..	Tararu Big Reefs	Alexander Whitley.
318. 3/12/01	97	0	0	" ..	"	" ..	Dixon's Consolidated	"
319. 3/12/01	17	2	0	Tairua ..	VI.	Tairua ..	Taniwha No. 2 ..	William Gough Webb.
321. 3/12/01	57	3	39	Waiomo ..	XIV.	Hastings ..	Monowai ..	Monowai Gold-mines (Limited).
331. 21/1/02	71	3	29	Thames ..	IV.	Thames ..	Fame and Fortune	Fame and Fortune Mine (Ltd.).
335. 18/2/02	100	0	0	Tairua ..	VI.	Tairua ..	Wellington-Blucher	William Burton.
336. 18/2/02	16	0	0	Waiomo ..	XI., XIV.	Hastings ..	Paroquet ..	William Sylvester Styak.
338. 4/3/02	100	0	0	Whangamata	III.	Ohinemuri	Cascade	Edward Vardy Turnbull.
339. 4/3/02	5	0	0	Omahu ..	I.	"	Caledonian ..	Charles Odlum.
342. 18/3/02	5	0	0	Puru ..	II.	Thames ..	Tui	Hare Ngairo, Tuhi Kawa.
344. 8/4/02	2	0	0	Tararu ..	I.	" ..	Old Argosy ..	Joseph Govan, John Gibb.
347. 22/4/02	30	0	0	Ohui ..	IV.	Tairua ..	Harp of Tara ..	Joseph James Macky.
348. 22/4/02	16	2	0	" ..	"	" ..	Manaia	"
358. 6/6/02	18	0	0	Tairua ..	VI.	" ..	Rangipai ..	Alfred George Rule.
359. 6/6/02	18	0	0	" ..	"	" ..	Kaikoura ..	William Gough Webb.
364. 17/6/02	17	2	29	Thames ..	IV.	Thames ..	Keystone ..	William John McCormick.
365. 17/6/02	73	3	5	" ..	"	" ..	Kuranui ..	Kuranui Gold-mining Company.
369. 8/7/02	100	0	0	Omahu ..	IV., I.	Waihou and Ohinemuri	We Three ..	John Thomas James Tilsley.
370. 8/7/02	18	0	16	Tairua ..	IV.	Tairua ..	Southern Cross ..	William Armstrong.
371. 8/7/02	20	0	0	" ..	VI.	" ..	Taniwha Extended	George Morrison.
374. 22/7/02	39	2	39	Thames ..	IV.	Thames ..	Hidden Treasure	John Thomas Baker.
378. 5/8/02	82	1	23	Hape Creek	V.	" ..	Old Anchor ..	Eugene O'Sullivan.
379. 5/8/02	1	0	0	Waiotahi ..	IV.	" ..	Nonpareil Ext. ..	William McCullough.
380. 19/8/02	13	0	3	Mata Creek ..	VII.	Hastings ..	Tihoi	Hori te Manutaupua and 2 others.
381. 16/9/02	30	0	0	Tararu ..	IV.	Thames ..	Tararu* ..	Charles Edward MacCormick.
382. 16/9/02	27	3	34	Karaka ..	V.	" ..	George Turnbull ..	George Arrindell Dougall.
383. 16/9/02	4	2	29	" ..	IV.	" ..	Kia Ora	Edward Costley Keven and William John Ward.
384. 16/9/02	5	0	0	Puru ..	II.	" ..	Te Kapo ..	Hare Ngairo.
385. 16/9/02	1	0	0	Tararu ..	IV.	" ..	Taranaki † ..	Willie Ludwig.
386. 7/10/02	99	1	22	Great Barrier Island	VII.	Fitzroy ..	Sunbeam ..	Hugh McLiver.
387. 7/10/02	15	0	0	Omahu ..	I.	Ohinemuri	Klondike Ext. ..	John McLennan.
389. 21/10/02	65	0	5	Tararu ..	"	Thames ..	Temple Bar ..	Archibald Campbell.
392. 18/11/02	57	3	8	Thames ..	IV.	" ..	New Una ..	Robert Spiers Thorburn.
393. 2/12/02	7	0	32	Waiomo ..	XIV.	Hastings ..	Kelvin Grove ..	Lewis Edward Autridge.
394. 15/12/02	75	2	4	Wharekawa	VI.	Tairua ..	Coronation ..	Newell Butler Lusk.
395. 15/12/02	85	3	20	Tararu ..	IV.	Thames ..	Jubilee	Andrew McLeod.
396. 15/12/02	75	2	25	Wharekawa	VI.	Tairua ..	Coronation Ext. ..	Newell Butler Lusk.
398. 15/12/02	6	0	1	Thames ..	IV.	Thames ..	West Coast ..	John Northey.

*Special sea-beach claim. † Extended river claim.

WAIHI.

Quarts Claims.

207. 4/5/99	100	0	0	Waihi ..	XVI.	Ohinemuri	Key West ..	Waihi Consolidated (Limited).
209. 11/5/99	40	2	20	" ..	XV.	"	Golden Lure ..	Waihi Consols G.M. Co. (N.L.).
210. 11/5/99	98	2	30	" ..	"	"	Haines Morrin ..	"
211. 11/5/99	98	1	0	" ..	"	"	Waihi North ..	"
237. 25/5/99	100	0	0	" ..	XVI.	"	Waihi Extended ..	Waihi Extended G.M. Co. (Ltd.).
239. 25/5/99	66	2	8	" ..	"	"	Waihi Gladstone ..	H. Gilfillan, jun.
314. 28/6/99	60	0	0	" ..	XV.	"	Christmas Box ..	Waihi South Gold-mining Co.
315. 28/6/99	66	3	9	" ..	"	"	New Year ..	"
324. 12/7/99	100	0	0	Wharekirau-punga	VII.	"	Royal Standard ..	Francis Hodge.
327. 12/7/99	90	0	0	Waihi ..	XV.	"	Waihi West ..	Waihi Grand Junction Gold-mining Co. (Limited).
328. 12/7/99	100	0	0	" ..	XVI.	"	Waka ..	Ditto.
329. 12/7/99	90	0	0	" ..	"	"	Grand Junction ..	"
330. 12/7/99	100	0	0	" ..	"	"	Union ..	Waihi Gold-mining Co. (Limited).
332. 12/7/99	100	0	0	Waikino ..	XIV, IB.	Aroha ..	Fern Spur ..	"
333. 12/7/99	100	0	0	Waihi ..	XV., XVI.	Ohinemuri	Martha ..	"
334. 12/7/99	34	3	0	" ..	"	"	Ophir ..	"
335. 12/7/99	100	0	0	" ..	"	"	Britannia ..	"
396. 26/7/99	100	0	0	" ..	XV.	"	Favona ..	Waihi Consolidated (Limited).
558. 13/9/99	82	3	38	" ..	XVI.	"	Silverton ..	Waihi Gold-mining Co. (Limited).
559. 13/9/99	91	1	7	" ..	"	"	" No. 2 ..	"

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MINING PRIVILEGES—*continued.*

Number and Date of License.	Area.	Locality.	Block.	Survey District.	Name of Claim.	Name of Registered Owner.
	A. R. P.					
THE HAURAKI GOLDFIELDS—*continued.*						
WAIHI—*continued.*						
***Quarts Claims*—continued.**						
807. 15/11/99	100 0 0	Waihi ..	XV.	Ohinemuri	Waihi Welcome ..	Waihi South G.M. Co. (Limited).
967. 13/12/99	53 1 32	" ..	XVI.	"	Amaranth ..	Waihi Gold-mining Co. (Limited).
968. 13/12/99	101 3 4	" ..	XV. XVI.	"	Golden Run ..	"
1168. 22/2/00	100 2 30	" ..	XVI.	"	Rosemont ..	"
1308. 11/4/00	99 3 30	" ..	XV.	"	Buller ..	Waihi Alma G.M. Co. (N.L.).
1569. 7/6/00	47 1 32	" ..	"	"	Consols ..	Waihi Consols G.M. Co. (N.L.).
1953. 24/9/00	99 2 2	" ..	XVI.	"	Brilliant ..	Waihi Consolidated (Limited).
2327. 19/12/00	100 0 0	" ..	"	"	Pride of Waihi ..	Pride of Waihi Gold-mining Co.
2402. 31/1/01	99 3 35	" ..	XII.	"	Waihi Standard ..	Wm. Blomfield.
2737. 21/3/01	81 2 10	Waihi Beach	II.	Waihi North	Waihi Beach No. 1	Waihi Beach United G.M. Co.
2738. 21/3/01	97 0 0	"	"	"	" No. 2	"
2739. 21/3/01	37 1 24	"	"	"	" Foreshore	"
2819. 11/4/01	81 3 27	Waihi ..	XV.	Ohinemuri	Alma ..	Waihi Alma Gold-mining Co.
3030. 23/5/01	100 0 0	" ..	XII.	"	Coronet ..	Wm. Hollis and James Lucas.
3031. 23/5/01	100 0 0	Waihi Beach	II.	Waihi North	Waihi Surprise ..	Peter Conway.
4009. 6/6/01	89 2 18	Waihi ..	XV.	Ohinemuri	Pendine ..	Waihi Alma Gold-mining Co.
4030. 6/6/01	13 2 26	" ..	"	"	Waihi No. 1* ..	J. A. Thomson.
4051. 6/6/01	12 2 14	" ..	"	"	" No. 2* ..	"
4115. 11/7/01	100 0 0	Wharekirau-punga	VII.	"	Duke of York ..	C. D. Finn.
4171. 25/7/01	100 0 0	Waihi ..	XII.	"	Remus ..	Wm. Eddowes.
4172. 25/7/01	100 0 0	" ..	"	"	Romulus ..	"
4279. 22/8/01	100 0 0	" ..	"	"	Waihi Main Lead	James Daly and others.
4281. 22/8/01	100 0 0	" ..	"	"	Waihi Proprietary	E. M. Joll.
4341. 5/9/01	38 3 27	" ..	XV.	"	Waihi Alma ..	Waihi Alma Gold-Mining Co.
4799. 3/4/02	8 3 4	" ..	"	"	Wyverne ..	F. A. Rich.
4827. 24/4/02	5 1 2	" ..	"	"	Waihi Dredging No. 3*	"
4828. 24/4/02	98 1 32	" ..	"	"	Federal ..	Robert Worth.
4829. 24/4/02	97 2 20	" ..	"	"	Kitchener ..	Waihi Alma G.M. Co. (N.L.).
28. 24/6/02	90 2 0	" ..	XVI.	"	Federal Extended	Robert Worth.
29. 24/6/02	100 0 0	" ..	XV.	"	" No. 2 ..	J. W. Walker.
46. 30/7/02	9 0 2	Waikino ..	II.	Aroha ..	Alexandra ..	Waihi Gold-mining Co. (Limited).
81. 27/8/02	99 0 0	Waihi ..	XV.	Ohinemuri	Martha Hill Ext.	J. L. McKeown.
82. 27/8/02	34 1 0	" ..	"	"	Martha North ..	"
171. 29/10/02	19 2 0	" ..	XVI.	"	Pride Extended ..	Waihi Extended G.M. Co. (Ltd.).

* Special dredging claims.

TE AROHA.

Quarts Claims.

267.	1901	30	0	0	Wairongomai	Part X.	Aroha ..	Cadman ..	Thomas Gavin.
374.	1902	35	1	0	Te Aroha ..	"	" ..	Champion Lode Ex.	"
50.	1896	100	0	0	" ..	IX., X.	" ..	Gipsy King ..	Arthur E. Langley.
97.	1900	53	2	12	" ..	IX.	" ..	Golden Crown ..	W. B. Maxwell.
88.	1899	4	3	19	" ..	"	" ..	Golden Lead ..	Alexander Watson Edwards.
375.	1902	78	1	8	" ..	X.	" ..	Kia Ora	John Kennedy.
268.	1901	28	1	35	Wairongomai	"	" ..	Loyalty Palace ..	Thomas Gavin.
382.	1902	19	0	0	"	XII.	" ..	Mammoth Reefs ..	Edwin Henry Hardy.
53.	1896	27	2	0	Te Aroha ..	X.	" ..	Manchester ..	A. A. Lockwood.
49.	1896	100	0	0	" ..	IX., X.	" ..	Merchant of Venice	Robert Kelly.
52.	1896	99	0	0	" ..	X.	" ..	Mount Ryan ..	T. R. Eskrigge and C. F. Johnson.
69.	1897	99	0	0	" ..	IX	" ..	Mount Ryan Ext.	William Shaw.
40.	1896	94	0	0	" ..	X.	" ..	New Munster ..	New Munster Gold-mining Co.
93.	1899	61	0	29	" ..	IX.	" ..	Ranfurly ..	Patrick O'Meagher.
397.	1902	60	0	0	" ..	X.	" ..	Sceptre	Thomas Gavin.
269.	1901	3	3	18	Wairongomai	"	" ..	Surprise.. ..	Thomas Hill.
47.	1896	99	1	21	Te Aroha ..	IX.	" ..	Te Aroha ..	Richard Dovell.
51.	1896	46	3	32	" ..	V., IX.	" ..	Te Aroha Extended	"
345.	1901	30	0	0	" ..	X.	" ..	Te Aroha Lead-mines	Edwin Edwards.

MARLBOROUGH GOLDFIELDS.

BLENHEIM.

Alluvial Claims.

40B.	6/9/01	5	0	0	Top Valley ..	III.	Mt. Olympus	Allen's Claim ..	Robert Bell Allen.
81B.	13/2/02	5	0	0	Fabian's Creek	XVIII.	Pine Valley	Eureka	Charles Samuel Neville.
93B.	12/6/02	1	1	0	Top Valley ..	XVI.	"	Extended ..	Willie Allnutt.
117.	1/9/00	2	0	0	" ..	"	"	Venture	Thomas Eckford.

Dredging Claims.

95B.	1/7/02	58	0	0	Arm-chair Ck.	XVI.	Pine Valley	Alpine	Alexander Crawford Leslie.
100.	19/7/99	39	3	39	Top Valley ..	II.	Mt. Olympus	Builder	Joseph Mitchell.
17B.	6/6/01	52	0	0	Timm's Valley	XVII.	Pine Valley	Chamberlain .	Robert Howard Nolan.
125.	1/1/01	4	0	0	Enchanted Ck.	VI.	Mt. Olympus	Enchanted .	William Malone.
33B.	15/8/01	73	2	0	Top Valley ..	II.	"	Lord Kitchener ..	Arthur William Budge.
130.	1/1/01	21	0	0	Timm's Valley	Pt. XVII.	Pine Valley	Lord Roberts ..	William Benoni Parker.
7B.	6/6/01	78	0	0	Bartlett's Ck.	Pt. IX. and XIII.	Onamalutu	Luck at Last ..	Arthur R. V. Lodder.
69B.	9/1/02	79	2	16	Top Valley ..	II.	Mt. Olympus	Omdurman ..	Egmont Gold-dredging Company.

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MINING PRIVILEGES—*continued.*

Number and Date of License.	Area.	Locality.	Block.	Survey District.	Name of Claim.	Name of Registered Owner
	A. R. P.					
MARLBOROUGH GOLDFIELDS - *continued.*						
BLENHEIM—*continued.*						
***Dredging Claims*—continued.**						
120. 1/1/01	32 0 0	Top Valley ..	Pt. XV. and XVI.	Pine Valley	Pride of Marlborough	Pride of Marlborough Gold-dredging Company.
83B. 27/2/02	24 0 0	" ..	XVI.	"	Ranfurly ..	Duncan Campbell.
78B. 30/1/02	28 2 0	Arm-chair Ck.	II.	Mt. Olympus	Redvers Buller ..	Arthur Sidney Tonks.
30B. 4/7/01	78 2 0	Top Valley ..	"	"	Sink to Rise ..	Thomas Fowler.
Quarts Claims.						
13B. 6/6/01	85 0 0	Top Valley ..	Pt. XVI.	Pine Valley	Albion	Thomas Palmer Coveney.
47B. 25/10/01	100 0 0	Arm-chair Val.	XVI.	"	Duke of Cornwall	K. Macleod and F. Macleod.
46B. 25/10/01	50 0 0	"	"	"	Duke of York ..	Samuel Munson Neville.
77B. 23/1/02	30 0 0	Top Valley ..	"	"	Great Duke ..	W. B. Parker and Robert Powles
111. 30/12/99	80 3 0	" ..	"	"	Jubilee	Jubilee Gold-mining Company.
110. 30/12/99	82 2 0	" ..	"	"	Just for Luck ..	T. P. Coveney and John Wright.
12B. 6/6/01	100 0 0	" ..	"	"	Lord Hopetoun ..	Jubilee Gold-mining Company.
79B. 1/2/02	100 0 0	" ..	"	"	Missing Link ..	Kenneth Macleod, John Hayes, D. Campbell, and S. M. Neville.
104. 1/12/99	20 0 0	" ..	XVII.	Mt. Olympus	Shotover ..	Harry Edward Good.
61. 5/12/01	95 2 0	" ..	XVI.	Pine Valley	Surprise.. ..	Thomas Eckford.
48B. 25/10/01	100 0 0	Arm-chair Ck.	"	"	Vida Marion ..	Richard Turnbull and G. Scott.
4B. 1/4/01	100 0 0	Top Valley ..	Pt. XVI.	"	Wellington ..	P. K. Watty and T. W. Young.
HAVELOCK.						
Alluvial Claim.						
133. 9/7/01	2 2 0	Wakamarina	X.	Wakamarina	Golden Hope ..	J. K. Hart, of Canvastown.
Dredging Claims.						
59. 30/6/94	4 2 11	Wakamarina	..	Wakamarina	Wakamarina Gorge	Coveney and Chote, of Wellington.
134. 16/8/01	21 2 15	"	XIV.	"	Wakamarina Golden Point	Wakamarina Golden Point Dredging Company.
Quarts Claims.						
63. 18/11/95	8 2 15	Wakamarina	..	Wakamarina	Federation Extended	Walter James Hunt
64. 18/11/95	24 2 21	"	..	"	Great Yorkshire ..	"
69. 19/8/96	30 0 0	"	..	"	Golden Bar ..	Wakamarina Golden Bar G.M. Co.
77. 25/10/96	16 1 6	"	..	"	" ..	"
NELSON AND WEST COAST GOLDFIELDS.						
NELSON.						
Dredging Claims.						
13. 24/4/01	63 0 0	Bed of Wangapeka River	Sec. C 5, VI.	Wangapeka	Wangapeka ..	Wangapeka G.D. Co.
14. 24/4/01	98 2 0	Ditto ..	Sec. C 4, XI.	"	"	"
16. 24/4/01	63 2 0	" ..	Sec. 17, X.	"	"	"
17. 24/4/01	45 0 0	" ..	Sec. 20, XIV.	"	Bonanza King ..	Fergus Ferguson McLeod, Wanganui.
18. 24/4/01	34 0 0	Bed of Rolling River	Sec. C, XII.	Owen ..	Wangapeka ..	William Young, Wanganui.
MOTUEKA						
Alluvial Claims						
45. ..	30 0 0	Tableland, Mt. Arthur	Sec. 1, V.	Mt. Arthur	..	Charles Lewis.
52. ..	1 3 33	Ditto ..		"	..	"
COLLINGWOOD.						
Alluvial Claims.						
12. 10/5/99	5 0 0	McArtney's Hill	IV.	Aorere ..	..	Henry Peter Hawkins.
48. 18/8/99	2 0 4	Anatoki River	IX.	Waitapu ..	..	(Mrs.) Eliza Harvey.
60. 16/9/99	3 0 32	Spittal's Flat, Anatoki River	VIII.	" ..	..	William Morrison.
61. 16/9/99	3 0 0	Anatoki River	"	" ..	..	John Patrick Hayes.
19. 7/8/00	4 0 0	Sec. 4 ..	"	" ..	..	William Morrison.
21. 9/8/00	9 3 9	" 9 ..	X.	Aorere ..	..	The Collingwood Goldfields (Ltd.).
25. 15/5/00	48 2 21	" 12 ..	XIV.	" ..	..	"
26. 15/5/00	46 3 29	" 6 ..	X.	" ..	..	"
27. 15/5/00	85 3 5	" 7 ..	"	" ..	..	"
28. 15/5/00	100 0 0	" 2 ..	XIV.	" ..	..	"
54. 18/5/00	6 2 8	" 18 ..	IX.	Waitapu ..	..	Francis Roach.
55. 28/6/00	81 1 24	" 21 ..	IV.	Aorere ..	..	The Slate River Sluicing Co.
57. 28/6/00	83 0 0	" 1 ..	I.	Waitapu ..	..	The Parapara H.S. and M. Co.
76. 10/10/00	25 1 16	" 32 ..	VIII.	Aorere ..	..	"
85. 15/11/00	64 3 35	" 24 ..	IV.	" ..	..	"

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MINING PRIVILEGES—*continued.*

Number and Date of Licenses.	Area.	Locality.	Block.	Survey District.	Name of Claim.	Name of Registered Owner.
		NELSON AND WEST COAST GOLDFIELDS -*continued.*				
		Collingwood—*continued.*				
	A. R. P.	*Alluvial Claims*—continued.				
87. 16/11/00	4 0 0	Spittall's Flat, Anatoki River	VIII.	Waitapu ..	..	(Mrs.) Eliza Harvey.
18. 28/2/01	2 0 0	Part of sec. 14	IV.	Aorere ..	..	James Day.
25. 16/1/01	23 1 0.3/10	Sec. 12 C ..	"	" ..	..	The Slate River Sluicing Co.
28. 18/1/01	4 0 4	Sec. C 9 ..	IX.	Waitapu ..	..	(Mrs.) Eliza Harvey.
61. 13/11/01	50 0 0	Sec. C 7 ..	"	" ..	..	The Takaka Sluicing Co.
25. 13/8/02	2 0 0	Druggan's Flat	..	Aorere ..	..	William Nicholas.
26. 13/8/02	2 0 0	Ditto ..	..	" ..	..	George Henry Allan.
33. 13/9/02	2 0 0	Kaituna River	III.	" ..	..	James Peterson and Leonard Thomason.
		Dredging.				
14. 19/2/01	68 2 24	Sec. 15 ..	IV.	Aorere ..	..	Aorere G.D. Co.
46. 18/7/01	80 2 0	" 5 ..	I.	Waitapu ..	..	Frederick A. Boyes.
41. 22/11/02	83 3 29	" 12 and 13	VII.	Aorere ..	..	Golden Bay G.D. Co.
40. 7/11/02	39 0 29	" 8 ..	XIV.	Pakawau ..	..	Edmund Goodbehere.
28. 9/9/02	7 0 16	" 23 ..	IV.	Aorere ..	..	William Grant.
42. 13/3/01	12 1 8	" 21 ..	III.	" ..	..	Kaituna River G.D. Co.
45. 18/7/01	34 2 32	" 6 ..	I.	Waitapu ..	..	Parapara Flat G.D. Co.
37. 1/6/01	60 2 22	" 5 ..	XIV.	Pakawau ..	..	George Willis Riley.
10. 14/5/02	58 2 32	" 3 ..	"	" ..	..	Thomas Wardell.
11. 14/5/02	75 1 11	" 4 ..	"	" ..	..	"
1. 6/3/02	50 0 0	" 14, C 8 ..	IV., VII.	Aorere ..	..	Wellington Prospecting Syndicate.
		Quartz Claim.				
59. 25/7/00	19 0 0	Sec. 8 ..	X.	Aorere ..	..	Joseph Taylor.
		Lyell and Murchison.				
		Alluvial Claims.				
42w. 12/3/94	100 0 0	Section 1 ..	VII.	Matakitaki	Mammoth ..	Thomas George Macarthy.
95w. 12/7/00	10 0 0	Matakitaki ..	..	..	..	Uriah Hannah.
160w. 13/9/00	29 3 37	Section 2 ..	XV.	Burnett ..	Record	George Walker.
191w. 17/1/01	39 2 34	..	"	" ..	Hector	Hector Bates Walker.
212w. 9/5/01	20 0 0	Fern Flat ..	..	..	..	Houston Francis Logan.
220w. 11/7/01	20 0 0	Matakitaki ..	..	..	..	James McDowell.
223w. 11/7/01	19 0 20	Section 114 ..	..	Lyell ..	Neville and Perkins	Neville and Perkins Hydraulic Sluicing Co.
232w. 12/9/01	76 1 23	" ..	..	" ..	"	Ditto.
310w. 11/9/02	20 0 0	Newton Flat	..	..	..	E. D. Davies and J. Barclay.
309w. 11/9/02	20 0 0	"	..	..	..	Ah Gin.
312w. 11/9/02	20 0 0	Fern Flat ..	..	..	..	John, James, and W. Ryan.
12. 26/4/99	97 2 2	Section 13 ..	III.	Inangahua	Welshman's Terrace	Matteo Della Vedova.
172. 13/8/02	20 0 0	Lyell ..	..	..	..	William Robinson.
		Dredging Claims.				
49w. 11/1/00	41 1 19	Section 14 ..	XV.	Lyell ..	Northern ..	Buller United G.M. and D. Co.
50w. 11/1/00	34 2 28	Section 13 ..	"	" ..	Auckland ..	"
146w. 13/9/00	15 0 0	Matakitaki ..	..	..	Hauhau	Houston Francis Logan.
201w. 14/8/01	42 0 12	Section 1 ..	XV.	Lyell ..	The Newton ..	Charles A. Ulrich.
202w. 14/8/01	99 3 0	Section 12 ..	V.	Tutaki ..	Kohikohi ..	The Kohikohi Gold-dredging Co.
221w. 11/7/01	20 0 0	Matakitaki ..	..	..	..	George Van Belle.
222w. 11/7/01	20 0 0	"	..	..	..	"
247w. 14/11/01	45 0 0	Section 46 ..	XVI.	Lyell ..	Fern Flat ..	The Fern Flat Proprietary.
248w. 14/11/01	19 0 0	Fern Flat ..	..	..	" ..	"
265w. 16/1/02	12 0 0	Matakitaki ..	..	..	..	John R. Randerson.
267w. 16/1/02	20 0 0	"	..	..	..	"
266w. 16/1/02	10 0 0	"	..	..	..	"
275w. 13/3/02	58 0 0	Section 1 ..	II.	Tutaki ..	..	Walter Gibbs.
276w. 13/3/02	34 3 37	Section 6 ..	I.	" ..	..	John R. Randerson.
288w. 15/5/02	98 0 0	Section 2 ..	XIII.	" ..	..	Owen McArdle.
289w. 15/5/02	10 0 0	Fern Flat ..	..	..	..	The Fern Flat Proprietary.
290w. 15/5/02	20 0 0	Matakitaki ..	..	..	..	George Walker.
297w. 10/7/02	46 2 0	Section 3 ..	IX.	Tutaki ..	..	Lewis Henry Balfour Wilson.
306w. 11/9/02	68 0 0	Section L15	V.	" ..	..	George Walker.
307w. 11/9/02	44 1 39	Section 40 ..	I.	" ..	..	Houston Francis Logan.
308w. 11/9/02	60 1 20	Section L14	VI.	Matakitaki	..	Alice Maud Gow.
311w. 11/9/02	20 0 0	Matakitaki ..	..	..	..	Charles G. Morel.
19. 18/5/99	20 0 0	Lyell ..	..	..	..	Thomas Joseph Malloy.
24. 1/8/99	83 1 25	Section 37 ..	V.	Inangahua	Premier	Premier Gold-dredging Co.
25. 1/8/99	56 1 22	Section 7 ..	VIII.	Ohika ..	Old Diggings ..	Old Diggings Gold-dredging Co.
32. 14/9/99	18 0 0	Lyell ..	..	..	Premier ..	Premier Gold-dredging Co.
37. 2/10/99	59 0 0	Section 15 ..	VI.	Inangahua	Mokoia	Mokoia Gold-dredging Co.
40. 9/11/99	25 0 0	Section 5 ..	IV.	Ohika ..	..	Thomas Joseph Malloy.
58. 11/1/00	100 0 0	Section 52 ..	"	Inangahua	Rocklands ..	The Rocklands Beach G.D. Co.
110. 7/11/00	59 0 30	Section 39 ..	V.	"	Welcome ..	Welcome Gold-dredging Co.
128. 9/5/01	20 0 0	Lyell .	..	..	..	John Cullen.

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MINING PRIVILEGES—*continued.*

Number and Date of License.	Area.	Locality.	Block.	Survey District.	Name of Claim.	Name of Registered Owner.
	A. R. P.					
NELSON AND WEST COAST GOLDFIELDS—*continued.*						
LYELL AND MURCHISON—*continued.*						
		Dredging Claims—continued.				
127. 11/7/01	63 0 36	Section L2 ..	V.	Inangahua	Buller Junction ..	Buller Junction G.D. Co.
133. 11/7/01	85 12 0	Secs. 5, 6, 22	VI.	"	..	Matteo Della Vedova.
147. 14/11/01	53 0 0	Section 18 ..	III.	"	..	James Henry McKay.
148. 14/11/01	46 3 0	Section 19 ..	"	"	..	John P. Burley.
149. 14/11/01	10 0 0	Lyell ..	..	..	..	John Cullen.
156. 16/1/02	20 0 0	" ..	..	.	..	Vernon Hill.
157. 16/1/02	20 0 0	" ..	..	..	..	John Cullen.
170. 13/3/02	32 0 20	Section 17 ..	III.	Inangahua	..	William Henry Penno.
172. 13/3/02	20 0 0	Lyell ..	..	..	..	William Robinson.
173. 13/3/02	17 0 0	" ..	..	..	..	Andrew Campbell.
175. 13/3/02	20 0 0	" ..	..	..	..	Frederick C. Feddersen.
186. 15/5/02	16 0 0	" ..	..	..	Buller Junction ..	Buller Junction G.D. Co.
208. 13/11/02	60 1 0	Section L8 ..	XVI.	Orikaka ..	Feddersen's ..	The Feddersen G.D. Co.
		Quarts Claims.				
27. 1/8/99	96 3 28	Sec. 23, 94, 100	XIII.	Lyell ..	Alpine Extended ..	Alpine Extended G.M. Co.
28. 1/8/99	57 3 32	Sec. 38 ..	"	" ..	" ..	"
95. 12/7/00	16 0 0	Lyell ..	..	..	Tyrconnell ..	John Kelly and party.
105. 13/9/00	30 0 0	Sec. 67 ..	I.	Maruia ..	Maid of the Forest	John McNeill.
111. 7/11/00	20 0 0	Lyell ..	..	..	..	Frederick Harrison and party.
154. 16/1/02	19 0 0	" ..	..	..	..	Jaketh Leggoe.
155. 16/1/02	19 0 0	" ..	..	..	..	Walter Bird.
174. 13/3/02	17 0 0	" ..	..	..	..	Michael Dunn and party.
189. 10/7/02	10 0 0	" ..	..	..	..	Gordon Harcourt.
WESTPORT.						
		Alluvial Claims.				
74. 19/7/00	41 1 0	Addison's ..	II.	Waitahu ..	..	Alex. Senior and others.
197. 19/7/00	33 0 15	Karamea ..	XV.	Oparara ..	..	Daniel Scarlett, jun.
218. 6/8/01	20 0 0	Virgin Flat	..	Waitahu ..	Warne Bros. ..	Henry Warne.
320. 22/9/01	15 0 0	Bradshaw's ..	..	Steeples ..	Lowther and party	T. Lowther and H. M. Lowther.
409. 1/8/00	18 0 0	" ..	II.	" ..	..	Charles Lind and others.
413. 15/3/00	10 0 0	Addison's ..	..	Waitahu ..	..	Thomas McCann and others.
8. 20/6/00	19 0 0	Bradshaw's ..	..	Steeples ..	Bradshaw's Terrace	James M. Dennehy and another.
56. 15/3/00	9 3 9	Addison's ..	II.	Waitahu ..	Halligan and party	Peter Halligan and others.
84. 7/3/99	20 0 0	" ..	I.	Ohika ..	..	William Mouatt and others.
199. 1/6/99	32 1 2	Old Diggings	IV.	Inangahua	..	The Wellington Mining and Water-supply Co.
237. 31/8/99	25 1 33	Addison's ..	II.	Waitahu ..	..	James Morgan and others.
238. 1/9/99	55 0 20	" ..	II., IV.	Waitahu & Steeples	..	Addison's Long Tunnel G.M. Co.
302. 6/9/99	10 2 28	" ..	II.	Waitahu ..	..	William Gould and others.
322. 1/9/99	100 0 0	" ..	IV.	Steeples ..	..	Golden Sand G.M. Co.
323. 1/9/99	41 2 37	" ..	II.	Waitahu ..	..	William Millikin and others.
385. 31/1/00	20 0 0	" ..	"	"	..	Philip McEnroe.
388. 18/2/02	66 2 0	" ..	V.	"	..	Shamrock Lead G.M. Co.
402. 4/3/02	99 3 0	" ..	I.	"	Virgin Flat ..	The Virgin Flat G.M. Co.
515. 16/7/02	10 0 0	" ..	..	..	Callinan and party	John Callinan.
539. 6/8/02	20 0 0	" ..	..	..	Dynan and party ..	John Dynan and others.
547. 20/8/02	100 0 0	Karamea ..	X.	Oparara ..	Golden Flat ..	E. Catchpole and T. L. Bennett.
592. 5/11/02	94 3 39	Fairdown ..	V.	Kawatiri ..	Rochfort ..	Wilfred Thomas Sles.
35. 7/3/99	5 0 0	Bradshaw's ..	Unsurveyed	Steeples ..	..	Edmund Gillon.
473. 2/5/00	4 2 10	Addison's ..	"	Waitahu ..	..	Alex. Senior and party.
46. 15/8/00	5 0 0	Mokihinui ..	"	Mokihinui	..	Chas. Stewart and J. Watkins.
160. 12/12/00	5 0 0	Waimangaroa	"	Kawatiri ..	..	Walter Davis.
206. 6/2/01	5 0 0	Buller River	"	Ohika ..	..	William Beuly.
231. 20/3/01	5 0 0	"	"	" ..	..	Richard Felton.
575. 22/1/02	4 0 0	Birchfield ..	"	Kawatiri ..	..	Frederick Lowe.
475. 22/5/02	2 0 0	Buller River	"	Ohika ..	..	John Hubert Hill.
509. 16/7/02	5 0 0	Birchfield ..	"	Kawatiri ..	..	Jeremiah Sullivan.
510. 16/7/02	5 0 0	" ..	"	" ..	..	Alexander Simpson.
553. 3/9/02	19 0 0	Bradshaw's ..	"	Steeples ..	..	Edmund Gillon and Jas. Collins.
		Dredging Claims.				
282. 3/7/01	98 1 0	Waimangaroa	II.	Kawatiri ..	Buller Fed. No. 1	Buller Federated G.M. and D. Co.
293. 18/7/01	97 3 8	"	I.	" ..	" No. 2	"
279. 7/6/01	95 2 16	"	II.	" ..	Buller United ..	Buller United G.M. and D. Co.
408. 15/3/00	55 3 0	Buller River	III.	Ohika ..	..	"
410. 5/4/00	31 2 39	Ngakawau ..	VI.	Ngakawau	..	"
406. 15/3/00	52 2 0	Buller River	III.	Ohika ..	..	"
520. 19/4/00	29 1 0	"	"	" ..	Buller United ..	Charles Adalbert Ulrich.
354. 15/11/99	20 0 0	"	..	Inangahua	" ..	"
521. 1/7/00	64 0 0	Waimangaroa	II.	Kawatiri ..	" ..	Stony Creek Gold Mining and Dredging Company.
407. 15/3/00	52 3 0	Buller River	III.	Ohika ..	No. 1 Ohika-iti ..	Buller United Gold Mining and Dredging Company.
260. 20/9/99	20 0 0	"	IV.	Inangahua	..	John Patrick Burley.
454. 15/3/00	28 1 0	Birchfield ..	II.	Kawatiri ..	Castalia Spring ..	Charles Adalbert Ulrich.
47. 15/8/00	66 2 0	Buller River	IV.	Inangahua	El Dorado ..	El Dorado Gold-dredging Co.
355. 15/11/99	20 0 0	"	..	"	" ..	"

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MINING PRIVILEGES—*continued.*

Number and Date of License.	Area. A.	R.	P.	Locality.	Block.	Survey District.	Name of Claim.	Name of Registered Owner.
NELSON AND WEST COAST GOLDFIELDS—*continued.*								
WESTPORT—*continued.*								
Dredging Claims—continued.								
28. 17/7/00	89	2	6	Fairdown ..	V.	Kawatiri ..	Fairdown Creek ..	Fairdown Gold-dredging Company.
262. 15/5/01	77	1	24	Birchfield ..	II.	"	Hope of Birchfield	Charles Adalbert Ulrich.
178. 13/12/00	97	1	24	Fairdown ..	V.	"	Island Creek ..	Island Creek Gold-dredging Company.
180. 2/11/00	84	3	0	Karamea ..	XIV.	Oparara ..	Karamea River No. 1	Robert Johnson, jun.
181. 2/11/00	57	2	30	" ..	XV.	" ..	" No. 2	"
19. 4/7/00	55	3	26	Mokihinui ..	"	Mokihinui	King's Own ..	Edwin Croucher Kingswell.
57. 19/7/00	59	0	0	" ..	"	"	Lord Roberts ..	Thomas Alexander.
514. 16/7/02	32	1	15	Waimangaroa	I.	Kawatiri ..	Moore Waimangaroa	John Brodie.
278. 7/6/01	47	0	25	Birchfield ..	V.	Ngakawau	Saxon	Fred Beverley.
330. 16/10/01	65	1	0	" ..	II.	Kawatiri ..	" Extended ..	James Bradley.
431. 5/4/00	20	0	0	Mokihinui ..	..	Mokihinui	..	Edward Seager.
411. 5/4/00	11	0	32	Ngakawau ..	I.	Ngakawau	..	Stony Creek Gold-dredging Co.
403. 4/3/02	20	0	0	" ..	..	"	Stony Creek ..	"
172. 13/12/00	91	3	32	Waimangaroa	I.	Kawatiri ..	Waimangaroa ..	Wallace Mackenzie.
540. 6/8/02	28	0	7	"	II.	"	Waimangaroa River	Waimangaroa River Gold-dredging Company.
329. 16/10/01	90	1	0	Karamea ..	IX.	Oparara ..	Walters and party	William Benjamin Walters.
Quarts Claims.								
39. 19/7/00	100	0	0	Denniston ..	X.	Kawatiri ..	A 1	Arthur D'Oyley Bayfeild.
319. 20/9/01	99	2	0	Stony Creek	"	Ngakawau	Britannia ..	Britannia Gold-mining Co.
370. 21/1/02	88	1	13	"	"	"	" ..	Stony Creek Gold-mining Co.
417. 16/4/02	20	0	0	Seatonville ..	XIII.	Maruia ..	Muckle and party	Thomas Muckle.
389. 18/2/02	20	0	0	Mokihinui ..	"	" ..	..	Red Queen Gold-mining Co.
463. 7/5/02	5	0	0	Seatonville ..	..	" ..	..	"
410. 2/4/02	20	0	0	" ..	XIII.	" ..	Southern Light ..	Alex. Stewart and Chas. Stewart.
CHARLESTON.								
Alluvial Claims.								
75/00	8	0	0	Croninville ..	IV.	Waitakiri	Great Extended ..	J. O'Donnell and M. O'Donnell.
87/01	60	3	0	9-mile Beach	I.	"	Great Northern ..	B. Boese, R. Bourke, and R. J. Powell.
88/01	59	3	0	"	"	"	Great Northern No. 2	Ditto.
89/01	91	2	16	"	"	"	The Totara ..	James Seager, Thomas Roskruge.
90/01	87	3	4	"	"	"	The Totara Ext. ..	" "
92/01	8	2	37	Charleston ..	VI.	"	..	Edward McClatchie.
7/01	37	3	16	9-mile Beach	III.	"	Powell's Claim ..	John Morgan Powell.
31/02	14	0	0	Brown's Ter.	..	"	..	Alfred Parsons.
40/02	10	3	39	Croninville ..	VI.	"	..	Thomas Shine.
REEFTON.								
Alluvial Claims.								
548. 1/12/99	8	0	0	Adjoining A 1 Co's. S.C.	..	..	Capleston ..	James Billett.
217. 1/6/99	20	0	0	Frying-pan Flat	..	..	Balfour ..	R. J. F. Davie.
277. 30/6/99	30	0	0	Section 8 ..	VI.	Reefton ..	..	Walter Irving.
85. 24/3/99	5	0	0	Blackwater ..	..	..	..	Thomas Rea and M. Minehan.
271. 1/7/99	10	0	0	Lankey's Ck.	..	..	..	Frank Willis.
802. 1/6/00	3	0	0	Blackwater ..	..	..	..	Chow Gow and others.
890. 1/9/00	5	0	0	Antonio's ..	..	..	..	Patrick McGeady.
900. 1/10/00	20	0	0	Stony Batter, Boatman's	..	..	..	C. T. Milner and another.
998. 1/1/01	5	0	0	Cariboo ..	..	..	..	Edward Johnston.
1042. 1/4/01	4	0	0	Cronadun ..	..	..	..	Robert J. F. Davie.
1174. 17/1/02	6	0	0	Boatman's Ck.	..	..	..	W. Surgeoner.
1175. 17/1/02	2	0	0	Merrijigs ..	..	..	..	Samuel Veale.
1202. 11/4/02	2	0	0	Boatman's ..	..	..	..	Tai Shong and Ohu Tai.
1256. 15/8/02	5	0	0	Deadman's Ck.	..	..	..	James P. Seymour.
1261. 29/8/02	5	0	0	Upper Blackwater	..	..	..	John Fyfe and Charles Porter.
1263. 29/8/02	5	0	0	Ditto ..	..	..	..	Louis Ourry and A. Ourry.
1270. 12/9/02	3	0	0	"	..	..	..	George Bannan.
Dredging Claims.								
355. 11/8/99	12	0	0	Sec. 9 ..	VI.	Reefton ..	A 1 ..	A 1 Gold-dredging Co.
1060. 1/5/01	74	2	2	" G 8 ..	"	" ..	" ..	"
1208. 16/5/02	82	3	38	" 11 and 12	"	" ..	Boatman's Creek ..	Boatman's Creek G.D. Co.
999. 1/1/01	99	2	16	" 3 ..	IX.	Inangahua	..	Annie Williams and T. Fagan.
Quarts Claims.								
148. 21/4/99	99	3	11	Sec. 174 ..	XIV.	Reefton ..	Albion ..	Consolidated Goldfields of N.Z.
395. 25/8/99	100	0	0	" 151 ..	II.	Waitahu ..	Ballance ..	Progress Mines of N.Z.
128. 7/4/99	100	0	0	" 169 ..	XIV.	Reefton ..	Beaconsfield ..	Consolidated Goldfields of N.Z.
1199. 14/8/02	54	1	6	Secs. 19 & 28	X.	Waitahu ..	Big River ..	Big River G.M. Co.
114. 7/4/99	100	0	0	Sec. 143 ..	XI.	Reefton ..	Blake ..	Consolidated Goldfields of N.Z.
112. 7/4/99	100	0	0	" 139 ..	"	" ..	Cadman ..	"

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MINING PRIVILEGES—*continued.*

Number and Date of License.	Area.	Locality.	Block.	Survey District	Name of Claim.	Name of Registered Owner.
		NELSON AND WEST COAST GOLDFIELDS—*continued.*				
		REEFTON—*continued.*				
	A. R. P.	*Quarts Claims*—continued.				
398. 25/8/99	16 0 21	" 142 ..	II.	Waitahu ..	Carbine ..	New Inkerman Mines.
486. 27/10/99	100 0 0	" 141 ..	"	" ..	" ..	"
394. 25/8/99	100 0 0	" 148 ..	"	" ..	Carroll ..	Progress Mines of N.Z.
489. 27/10/99	51 0 0	" 157 ..	"	" ..	Clarence ..	New Inkerman Mines.
397. 25/8/99	98 3 6	" 161 ..	"	" ..	Deep ..	Progress Mines of N.Z.
121. 7/4/99	29 3 20	" 3 ..	XII.	Reefton ..	Earl Brassey ..	Kirwan's Reward G.M. Co.
129. 7/4/99	54 0 0	" 201 ..	XIV.	" ..	Energetic ..	Consolidated Goldfields of N.Z.
233. 1/6/99	60 0 0	" 149 ..	XVI.	" ..	Fiery Cross ..	"
127. 7/4/99	100 0 0	" 168 ..	XIV.	" ..	Gladstone ..	"
391. 25/8/99	52 2 12	" 15 ..	II.	Waitahu ..	Globe ..	Progress Mines of N.Z.
118. 7/4/99	95 0 0	" 199 ..	XIV.	Reefton ..	Golden Fleece ..	Consolidated Goldfields of N.Z.
1021. 1/3/01	37 3 16	" G 6 ..	VI.	Waitahu ..	Golden Lead ..	Golden Lead G.M. Co.
1118. 16/8/01	8 2 16	..	"	" ..	" ..	"
443. 29/9/99	67 0 0	Sec. 203 ..	XIV.	Reefton ..	Golden Treasure ..	Consolidated Goldfields of N.Z.
84. 24/3/99	16 2 0	" 15 ..	"	" ..	Hercules ..	Keep-it-Dark Quartz-mining Co.
1170. 17/1/02	16 2 14	" 11 ..	VI.	Waitahu ..	Industry ..	Dan Walsh and R. Lees.
1066. 1/6/01	77 1 25	" 172 ..	XIV.	Reefton ..	Inglewood ..	P. N. Kingswell.
117. 7/4/99	49 2 0	" 181 ..	"	" ..	Juno ..	Consolidated Goldfields of N.Z
136. 7/4/99	28 2 25	" 166 ..	"	" ..	Keep-it-Dark ..	Keep-it-Dark Quartz-mining Co.
137. 7/4/99	16 1 27	" 68 ..	"	" ..	" ..	"
139. 7/4/99	21 1 36	" 14 ..	"	" ..	" ..	"
140. 7/4/99	34 3 38	" 105 ..	"	" ..	" ..	"
122. 7/4/99	29 3 20	" 4 ..	XVI.	Reefton ..	Kirwan's Reward	Kirwan's Reward G.M. Co.
123. 7/4/99	29 3 31	" 2 ..	XII.	" ..	Lady Brassey ..	"
393. 25/8/99	100 0 0	" 140 ..	II.	Waitahu ..	Larnach ..	Progress Mines of N.Z.
1172. 17/1/02	10 0 0	Portion of Secs. 31 & 38	VI.	" ..	Last Chance ..	A. Fleming, J. Morris, and J. Scarlett
124. 7/4/99	93 2 4	Sec. 1 ..	XVI.	Reefton ..	Lord Brassey ..	Kirwan's Reward G.M. Co.
491. 27/10/99	49 3 15	" 159 ..	II.	Waitahu ..	Louisa ..	New Inkerman Mines.
120. 7/4/99	100 0 0	" 139 ..	XIV.	Reefton ..	Low-level Tunnel	Consolidated Goldfields of N.Z.
134. 7/4/99	100 0 0	" 155 ..	II.	Waitahu ..	New Scotia ..	New Scotia G.M. Co.
410. 1/9/99	8 0 0	Adjoining Section 161	"	" ..	Oriental ..	Progress Mines of N.Z.
268. 9/6/99	29 1 11	Sec. 182 ..	XIV.	Reefton ..	Percival ..	D. Ziman.
329. 14/7/99	18 2 30	" 84 ..	II.	Waitahu ..	Progress ..	Progress Mines of N.Z.
330. 14/7/99	5 0 0	(Ext. Claim) Sec. 84	"	" ..	" ..	"
331. 14/7/99	15 3 33	Sec. 42 ..	"	" ..	" ..	"
332. 14/7/99	22 3 20	" 160 ..	"	" ..	" (Wedge) ..	"
390. 25/8/99	89 1 16	" 138 ..	"	" ..	Progress ..	"
392. 25/8/99	31 0 23	" 82 ..	"	" ..	Progressive ..	"
66. 10/3/99	85 3 24	" 37 ..	XIII.	Reefton ..	Revival ..	Gerald Perotti.
488. 27/10/99	33 0 0	" 18 ..	II.	Waitahu ..	" ..	New Inkerman Mines.
487. 27/10/99	57 2 0	" 143 ..	"	" ..	" ..	"
396. 25/8/99	100 0 0	" 152 ..	"	" ..	Rose	Progress Mines of N.Z.
119. 7/4/99	99 2 0	" 200 ..	XIV.	Reefton ..	Royal	Consolidated Goldfields of N.Z.
116. 7/4/99	100 0 0	" 171 ..	"	" ..	Salisbury ..	"
269. 9/6/99	100 0 0	" 138 ..	XI.	" ..	Seddon ..	D. Ziman.
1098. 1/6/01	80 0 0	" G 22 ..	XV.	" ..	Victoria ..	P. N. Kingswell.
267. 9/6/99	63 1 13	" 79 ..	XIV.	" ..	Wealth of Nations	D. Ziman.
131. 7/4/99	16 0 26	" 7 ..	VI.	" ..	Welcome ..	Welcome G.M. Co.
132. 7/4/99	28 2 8	" 103 ..	XI.	" ..	" ..	"
133. 7/4/99	23 0 26	" 63 ..	VI.	" ..	" ..	"
490. 27/10/99	99 0 9	" 164 ..	II.	Waitahu ..	Wilson ..	New Inkerman Mines.
1253. 15/8/02	9 2 35	" 32 ..	VI.	" ..	..	W. King, R. Mills, and E. Mills.
1283. 14/11/02	5 3 32	" 180 ..	XIV.	Reefton ..	..	John Windelburn.
		KUMARA.				
		Alluvial Claims.				
17. 10/5/99	4 0 0	Shamrock Lead	XII.	Waimea ..	..	Henry Burger.
29. 5/7/99	5 0 0	Shamrock Flat	..	" ..	..	Henry Burger.
39. 26/7/99	3 0 0	Quinn's Ter.	G.C.	..	..	Zep One.
40. 26/7/99	2 0 0	Blue Bluff ..	"	..	..	"
42. 26/7/99	20 0 0	Cape Terrace	"	..	..	T. T. Lohmann.
52. 23/8/99	3 0 0	Brat. Dillman's Road	W.C.	..	..	J. Shrives.
181. 17/1/00	2 0 0	Kapitea Creek	"	..	..	M. Eggleton.
W328. 12/9/99	41 0 9	Shamrock Lead	XII.	Waimea ..	..	Julia McGrath.
W319. 12/9/99	32 1 2	Larrikin's ..	"	" ..	..	"
W342. 5/12/99	82 3 31	Morris's Pt.	VII.	" ..	..	William Morris.
W354. 5/12/99	26 1 39	Payne's Gully	XII.	" ..	..	Annie Anderson.
G34. 13/12/99	30 0 0	Maori Point	II.	Hohonu ..	..	Patrick Ryan.
W334. 5/2/00	82 2 0	Westbrook ..	IX.	..	..	Greenstone Creek G.D. Co.
16. 28/8/00	10 0 0	Shamrock Flat	XII.	Waimea ..	..	George Burger.
W299. 2/5/00	9 0 0	Cape Terrace	"	" ..	..	Elizabeth Burr.
54. 13/6/00	8 0 0	Quinn's Ter.	G.C.	" ..	..	W. H. Evenden.
58. 13/6/00	5 0 0	Fuchsia Ck.	"	" ..	..	Ah Lye.
63. 4/7/00	9 0 0	Cape Terrace	"	" ..	..	Patrick Tansey.

NOTE.—W.C. in "Block" column means Westland County, and G.C. Grey County.

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MINING PRIVILEGES—*continued.*

Number and Date of License.	Area.	Locality.	Block.	Survey District.	Name of Claim.	Name of Registered Owner.
	A. R. P.					
NELSON AND WEST COAST GOLDFIELDS—*continued.*						
KUMARA—*continued.*						
Alluvial Claims—continued.						
78. 19/9/00	20 0 0	Paddy's Gully	IX.	Hohonu ..	..	S. R. Harris.
80. 1/8/00	12 0 0	Fine-gold Ter.	W.C.	..	..	A. H. Wheeler.
89. 22/8/00	7 0 0	Revell's Ter.	G.C.	..	..	Ah Shin.
91. 12/9/00	4 0 0	"	"	..	..	W. G. Whitton.
95. 12/9/00	5 0 0	Paddy's Gully	"	..	..	"
23. 18/4/00	4 0 0	Nailor Flat ..	W.C.	..	..	Thomas Candy.
105. 26/9/00	4 0 0	Fine-gold Ter.	"	..	..	A. H. Wheeler.
109. 11/10/00	60 0 0	..	XIII.	Waimea ..	..	Kumara Long Tunnel Co.
110. 11/10/00	4 0 0	Larrikin's ..	W.C.	" ..	..	James Anderson.
118. 24/10/00	16 0 0	Shamrock Lead	XII.	" ..	..	John Cullen.
119. 14/11/00	7 0 0	Ditto ..	"	" ..	..	Henry George.
120. 14/11/00	6 0 0	" ..	"	" ..	..	George Worsley.
121. 14/11/00	8 0 0	" ..	"	" ..	..	James Stephens.
123. 14/11/00	4 0 0	" ..	"	" ..	..	Daniel Ryan and others.
129A. 6/12/00	92 2 0	" ..	"	" ..	..	William O'Kane.
132. 6/12/00	4 0 0	Westbrook ..	G.C.	..	..	Martha Foley.
133. 6/12/00	7 0 0	Shamrock Lead	XII.	Waimea ..	..	George Schroder.
136. 6/12/00	10 0 0	Mignonette Flat	W.C.	..	..	Thomas Thorn.
137. 6/12/00	2 0 0	Shamrock Lead	XII.	Waimea ..	..	Mary Candy.
138. 6/12/00	4 0 0	Ditto ..	"	" ..	..	George Brown.
139. 6/12/00	10 0 0	Kumara ..	"	" ..	..	S. Arnerich.
149. 6/12/00	4 0 0	Shamrock Lead	"	" ..	..	G. B. Way.
150. 6/12/00	5 0 0	Ditto ..	"	" ..	..	Mary Candy.
12. 16/1/01	7 0 0	Quinn's Ter.	G.C.	..	..	W. H. Evenden.
19. 13/2/01	4 0 0	Shamrock Lead	XII.	Waimea ..	..	Thomas Dawson.
24. 27/3/01	2 0 0	..	IX.	Hohonu ..	..	Louis Korman.
15. 28/3/00	5 0 0	Shamrock Lead	XII.	Waimea ..	..	John Flanagan.
25. 10/4/01	8 0 0	Ross Terrace	G.C.	..	..	Gerald Dillon.
31. 24/4/01	9 0 0	Quinn's Ter.	"	..	..	F. H. Smith.
32. 24/4/01	3 0 0	Maori Point ..	"	..	..	F. Bischoff.
39. 22/5/01	20 0 0	Scotsman's Valley	"	..	..	W. G. Whitton.
45. 20/6/01	5 0 0	Larrikin's ..	W.C.	..	..	John Netherway.
52. 3/7/01	10 0 0	Hayes' Ter...	G.C.	..	..	G. B. Way.
56. 18/7/01	6 0 0	Cape Terrace	"	Waimea ..	..	W. Dreykluft.
62. 21/8/01	12 0 0	Larrikin's ..	W.C.	..	..	William Steel.
69. 4/9/01	5 0 0	Peter's Ter...	W.C.	..	..	Ah Key.
85. 18/12/01	5 0 0	Upper Lar'kns	W.C.	..	..	Thomas McGrath.
87. 18/12/01	20 0 0	Revell's Ter.	G.C.	..	..	W. G. Whitton.
88. 18/12/01	3 0 0	Sandstone Bluff	"	..	..	William Robertson.
2. 19/2/02	2 0 0	Larrikin's ..	W.C.	..	..	Patrick Caldwell.
18. 21/5/02	6 0 0	Mignonette Flat	"	..	..	James Shannon.
19. 4/6/02	3 0 0	Ditto ..	"	..	..	Conrad Werner.
22. 18/6/02	6 0 0	Larrikin's Flat	"	..	..	John Ritchie.
25. 30/7/02	8 0 0	Larrikin's ..	..	..	..	Edward Rochford.
29. 3/9/02	12 0 0	..	XII.	Waimea ..	..	Frank Thorn.
41. 5/11/02	10 0 0	Duke's Ter...	G.C.	..	..	John Harrington.
43. 19/11/02	6 0 0	Irishman's Gully	"	..	..	Henry Bunn.
44. 19/11/02	8 0 0	E. B. Line ..	W.C.	..	..	William Berdmer.
45. 3/12/02	10 0 0	Duke's Ter...	G.C.	..	..	James Bigg.
Dredging Claims.						
18. 13/2/01	100 0 0	..	VIII., XII.	Waimea ..	..	John White.
61. 21/8/01	100 0 0	..	"	" ..	..	A. Bruhn.
77. 6/11/01	100 0 0	..	VII.	" ..	..	H. Bruce.
27. 13/8/02	50 0 0	..	IX.	Hohonu ..	..	Three-mile Greenstone Ck. D. Co.
34. 22/10/02	61 1 10	..	XII. / IX.	Waimea / Hohonu	..	New Greenstone G.D. Co.
35. 22/10/02	78 3 28	..	XII.	Waimea ..	..	Greenstone Junction G.D. Co.
AHAURA.						
Alluvial Claims.						
105. 24/10/98	9 0 0	Ahaura River	I.	Ahaura ..	Ahaura Hydraulic	Arthur Dunn and Harriet Finlay.
42. 27/3/99	30 0 0	Blackball ..	III.	Mawhera-nui	..	J. T. Kinsella, J. Shrives, and J. Stenhouse.
58. 24/4/99	30 0 0	" ..	"	"	Republic ..	Republic Sluicing Company.
75. 24/4/99	2 0 0	Moonlight ..	XI.	Waiwhero	..	The Shetland Terrace H.S. Co.
98. 22/5/99	6 0 0	Nelson Creek	VIII.	Mawhera-nui	..	Michael O'Brien and Jas. Joyce.
102. 22/5/99	7 0 0	Healey's Gully	III.	"	..	C. Hillier, R. Long, & H. Marsden.
104. 22/5/99	15 0 0	Blackball ..	"	"	..	J. Pettitt, J. Hay, G. Pfaffert, and H. Marsden.
165. 27/7/99	20 0 0	Healey's Gully	"	"	..	Republic Sluicing Company.

NOTE.—W.C. in "Block" column means Westland County and G.C. Grey County.

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MINING PRIVILEGES—*continued.*

Number and Date of License.	Area.	Locality.	Block.	Survey District.	Name of Claim.	Name of Registered Owner.
	A. R. P.					
NELSON AND WEST COAST GOLDFIELDS—*continued.*						
AHAURA—*continued.*						
***Alluvial Claims*—continued.**						
169. 23/11/99	49 3 9	Blackball ..	III.	Mawhera-nui	..	The Montgomery Ter. H.S. Co.
174. 27/7/99	10 0 3	Nelson Creek	VIII.	"	..	R. Larkin, P. Sweetman, T. O'Rourke, J. Curnew, and M. Healey.
176. 27/7/99	2 0 0	Moonlight ..	..	Waiwhero	..	Charles Ashby and Jos. McGuire.
184. 24/8/99	4 0 0	Ahaura ..	IV.	Mawhera-nui	..	Charlie Jones, Thow Yun, and Yep Fong.
290. 28/9/99	5 0 0	Nelson Creek	VIII.	"	..	Samuel H. Thrower.
302. 28/9/99	5 0 0	Ahaura River	IV.	"	..	Arthur Dunn.
324. 28/9/99	2 0 0	Nelson Creek	VIII.	"	..	John Straker.
431. 23/11/99	10 0 0	Ahaura River	I.	Ahaura ..	..	Arthur Dunn.
438. 23/11/99	3 0 0	No Town Creek	XI.	Mawhera-nui	..	G. Gamble and M. McDonough.
450. 21/12/99	10 0 0	Blackball ..	III.	"	..	Montgomery Terrace H.S. Co.
472. 21/12/99	49 2 23	Bell Hill ..	I.	Kopara ..	..	T. V. Byrne, J. H. Hopkins, C. P. Carlsson, W. J. McIlroy, and E. H. Scott.
478. 25/1/00	2 0 0	Blackball ..	III.	Mawhera-nui	..	Montgomery Terrace H.S. Co.
491. 25/1/00	3 0 0	Ahaura River	I.	Ahaura ..	..	C. Jones, Thow Yun, & Yep Fong.
533. 22/3/00	15 0 0	Healey's Gully	III.	Mawhera-nui	..	D. Hyndman, W. Baxter, E. Smith, J. Gittos, J. Balamie.
774. 31/5/00	3 0 0	Orwell Creek	II.	Ahaura ..	..	Antonia Giambonini.
779. 31/5/00	3 2 0	Blackball ..	III.	Mawhera-nui	..	G. Anderson, J. Pettitt, J. Hay, and G. Phfalert.
785. 31/5/00	10 0 0	" ..	"	"	..	Hugh Allison and Henry Weber.
845. 28/6/00	10 0 0	Red Jack's ..	VII.	"	..	The Red Jack's G.D. Co.
880. 28/6/00	3 0 0	Try-again Ter.	VIII.	"	..	Richard Larkin.
960. 28/8/00	2 0 0	Ahaura ..	VI.	Ahaura ..	..	Ah Too and Ah Tchoo.
991. 27/9/00	2 0 0	Red Jack's ..	VII.	Mawhera-nui	..	Sue Yin and Soo Gee.
1001. 27/9/00	4 0 0	No Town ..	II.	"	..	Thomas Wharton.
1116. 19/12/00	2 0 0	Moonlight ..	XV.	Waiwhero	..	Anton Anderson.
1168. 30/1/01	10 0 0	Blackball ..	III.	Mawhera-nui	..	J. Cox, H. Dimond, W. Sherman, and E. P. Fowler.
1184. 30/1/01	5 0 0	Half Ounce ..	XIV.	Mawhera-iti	..	James D. Harper.
1190. 30/1/01	12 0 0	Ahaura River	I.	Ahaura ..	..	Thomas Prendergast.
1206. 27/2/01	40 2 25	Duffer's ..	II.	"	..	C. Ashby and J. D. Harper.
1230. 27/2/01	2 0 0	Nelson Creek	VIII.	Mawhera-nui	..	Pat, Peter, William, and Pat (jun.) Donnellan.
1235. 27/2/01	2 0 0	Moonlight ..	XV.	Waiwhero	..	T. Clancy and P. Clancy.
1270. 27/3/01	2 0 0	Red Jack's ..	XI.	Mawhera-nui	..	P. Fallon and S. Frankpitt.
1284. 24/4/01	8 0 0	Blackwater ..	VIII.	Mawhera-iti	..	Thomas Eldon Coates.
1286. 24/4/01	2 0 0	Moonlight ..	XV.	Waiwhero	..	R. Mitchell and W. Russell.
1293. 24/4/01	2 0 0	Blackball ..	III.	Mawhera-nui	..	William Hunter.
1349. 22/5/01	6 0 0	" ..	"	"	..	J. S. Hodgson and W. Greening.
1351. 22/5/01	10 0 0	" ..	"	"	..	Jacob Weber.
1423. 24/7/01	5 0 0	" ..	"	"	..	F. Boustridge and H. Egden.
1458. 28/8/01	20 0 0	" ..	"	"	..	J. O'Laughlin & T. T. Kinsella.
1462. 28/8/01	4 0 0	Ahaura River	I.	Ahaura ..	..	Samuel Samuels.
1465. 28/8/01	6 0 0	Nelson Creek	VIII.	Mawhera-nui	..	P. Donnellan.
1473. 25/9/01	82 3 20	Moonlight ..	XI.	Waiwhero	..	The Shetland Terrace H.S. Co.
1474. 25/9/01	81 2 30	" ..	"	"	..	"
1475. 25/9/01	20 0 0	Blackball ..	III.	Mawhera-nui	..	The Montgomery Ter. H.S. Co.
1476. 25/9/01	4 0 0	Moonlight ..	XV.	Waiwhero	..	Thomas Brock.
1501. 23/10/01	20 0 0	Bray's Creek	VI.	Mawhera-nui	..	Benjamin Wayler.
1502. 23/10/01	20 0 0	Grey River ..	"	"	..	Henry Bignell.
1503. 23/10/01	14 0 0	" ..	"	"	..	John Gieseking.
1504. 23/10/01	15 0 0	Blackball ..	II.	"	..	Henry Bignell.
1522. 27/11/01	6 0 0	Ahaura River	I.	Ahaura ..	..	Thomas Prendergast.
1523. 27/11/01	3 0 0	Blackball ..	II.	Mawhera-nui	..	Frederick Boustridge.
1524. 27/11/01	2 0 0	Callaghan's ..	IV.	"	..	Chow Yok.
1537. 11/12/01	2 0 0	Healey's Gully	III.	"	..	Charles Hillier, R. Long, and H. Marsden.
1538. 11/12/01	6 0 0	Blackball ..	II.	"	..	Joshua McIntyre.
1539. 11/12/01	10 0 0	" ..	"	"	..	Hugh Allison.
1540. 11/12/01	15 0 0	" ..	"	"	..	James Pettitt and J. McGuigan.
1559. 29/1/02	15 0 0	" ..	"	"	..	Jacob Weber.
1560. 29/1/02	20 0 0	" ..	"	"	..	Richard Henry Wessels.
1561. 29/1/02	5 0 0	" ..	"	"	..	Andrew Jamieson.
1564. 29/1/02	3 0 0	Moonlight ..	XV.	Waiwhero	..	Alexander Notman, E. Simonson, and J. Hoyer.
1591. 26/2/02	5 0 0	Blackball ..	II.	Mawhera-nui	..	Joseph Butler.
1593. 26/2/02	5 0 0	Brandy Jack's	XIII.	Mawhera-iti	..	J. Witham and M. Hoare.
1616. 26/3/02	4 0 0	Moonlight ..	XV.	Waiwhero	..	M. Devereux, E. Carton, E. Murphy, and J. Graham.
1618. 26/3/02	2 2 0	Nelson Creek	VIII.	Mawhera-nui	..	Thomas Jamieson.
1640. 23/4/02	3 0 0	Ahaura River	I.	Ahaura ..	..	G. Poppleston, M. Cahill, and J. Johnston.
1654. 28/5/02	6 0 0	Totara Flat ..	XIV.	Mawhera-iti	..	J. Marshall and D. Steele.
1655. 28/5/02	3 0 0	Blackwater ..	VIII.	"	..	J. Martin.
1656. 28/5/02	3 0 0	Nelson Creek	"	Mawhera-nui	..	J. J. Costigan and F. M. Tibbles.
1657. 28/5/02	2 0 0	Blackball ..	II.	"	..	J. Butler.
1694. 25/6/02	12 0 0	Gow's Creek	VIII.	"	..	Pat. Donnellan, sen., P. Donnellan, jun., and Wm. Donnellan.
1695. 25/6/02	2 0 0	Moonlight ..	XV.	Waiwhero	..	J. McGowan and J. Martin.

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MINING PRIVILEGES—*continued.*

Number and Date of License.	Area.	Locality.	Block.	Survey District.	Name of Claim.	Name of Registered Owner.
		NELSON AND WEST COAST GOLDFIELDS—*continued.*				
		AHAURA—*continued.*				
	A. R. P.	*Quartz Claims.*				
41. 27/3/99	100 0 0	Paparoa Mt.	XIV.	Waiwhero	Crœsus	Crœsus Gold-mining Company.
38. 27/3/99	95 0 13	"	X	"	Garden Gully ..	Gerald Perotti.
37. 27/3/99	95 3 17	"	XIV.	"	Minerva	"
1243. 27/3/01	99 2 0	"	"	"	..	"
1693. 25/6/02	80 0 0	"	"	"	..	"
39. 27/3/99	100 0 0	"	"	"	Taffy	Taffy Gold-mining Company.
		GREYMOUTH.				
		Alluvial Claims.				
324. 8/10/00	5 0 0	Canoe Creek	..	..	..	John Keele.
329. 22/10/00	5 0 0	Ten-mile ..	..	..	..	John Meiklejohn.
359. 22/10/00	4 0 0	Barrytown ..	..	..	..	John Ryall and John Heffernan.
363. 19/11/00	7 0 0	Maori Gully	..	..	..	John Hogan, jun.
281. 19/11/00	2 0 0	Dunganville	..	..	..	John Patterson and S. Milligan.
17. 14/1/01	5 0 0	North Beach	..	..	..	William Duffy.
91. 25/3/01	3 0 0	Marsden ..	..	..	..	Thomas Isbester and 2 others.
223. 12/8/01	3 0 0	Limestone ..	..	..	..	Dey Chung and Dey Baugh.
25A. 17/2/92	16 1 0	Near Marsden	IV.	Hohonu ..	..	Young Marn and 5 others.
2. 14/4/97	25 0 0	Barrytown ..	I.	Waiwhero	..	Evan Henry Lewis.
71. 1/6/99	7 3 6	Dunganville	"	Hohonu ..	..	Claus H. Lins.
27. 13/4/99	2 0 0	Stillwater ..	..	..	..	R. Fletcher and W. Fletcher.
60. 1/7/02	2 0 0	Welshman's Terrace	..	..	..	Ah Yoh.
92. 22/8/99	5 0 0	Bell Hill ..	..	..	..	Antonio Devescovi.
93. 22/8/99	5 0 0	Barrytown ..	..	..	..	Thomas O'Grady and another.
140. 27/9/99	92 2 12	" ..	IX.	Waiwhero	..	The Barrytown Flat G.M. Co.
195. 25/10/99	4 0 0	North Beach	..	..	..	Daniel Liddy.
252. 19/5/98	99 3 7	"	I.	Waiwhero	..	The Waiwhero Sluicing Co.
253. 19/5/98	99 3 30	"	"	"	..	"
256. 4/12/99	4 0 0	Dunganville	..	..	..	Soo Mee and 5 others.
174. 8/5/00	3 0 0	Cameron's Ter.	..	..	..	Munchin Keenan.
241. 11/6/00	2 2 0	Marsden ..	..	..	..	Young Marn and 5 others.
278. 8/8/00	95 1 12	Barrytown ..	I.	Waiwhero	..	The Waiwhero Sluicing Co.
319. 8/10/00	2 0 0	Canoe Creek	..	..	..	James Walsh and Maxwell Walsh
228. 12/8/01	10 0 0	Wooley Creek	..	..	..	The Kells Sluicing Co.
257. 7/10/01	7 0 0	McLean's Ck.	..	..	..	Ernest Gardener and 2 others.
10. 27/1/02	15 0 22	Rutherglen ..	IV.	Waimea ..	..	Hugh Francis Doogan and party.
28. 24/2/02	3 0 0	Marsden ..	..	..	..	John Flannagan.
29. 24/2/02	3 0 0	" ..	..	..	..	James Finn.
283. 25/11/02	2 0 0	" ..	..	..	..	Young Hing and Loo Ching.
66. 7/4/02	2 0 0	Near Barryto'n	..	..	..	The Waiwhero S. and D. Co.
67. 7/4/02	5 0 0	"	..	..	..	"
70. 21/4/02	5 0 0	"	..	..	..	"
95. 26/5/02	2 0 0	Marsden ..	..	..	..	Young Fong.
125. 23/6/02	5 0 0	Barrytown ..	..	..	..	Hugh Steel.
126. 23/6/02	67 0 0	Nine-mile ..	I.	Cobden ..	..	Nine-mile Sluicing Company.
152. 21/7/02	5 0 0	Limestone ..	..	..	..	Loo Lin and Hing Jum.
154. 21/7/02	5 0 0	" ..	..	..	..	Young You and Young Get.
		Dredging Claims.				
151. 8/5/00	2 0 0	Maori Gully	..	..	..	Maori Gully Gold-dredging Co.
210. 11/6/00	59 2 7	Paroa ..	XVI.	Greymouth	..	Francis Wallace McKenzie.
274. 8/8/00	80 0 36	North Beach	II.	Cobden ..	..	North Beach Gold-dredging Co.
277. 8/8/00	42 1 27	Grey River ..	X.	Arnold ..	..	Grey River Extended G.D. Co.
292. 8/8/00	18 0 0	" ..	..	..	..	"
251. 23/9/01	81 1 13	Section G 90	I.	Hohonu ..	..	Cornwall Gold-dredging Co.
299. 23/12/01	72 1 16	Seven-mile ..	"	Cobden ..	..	Matthew Ryan and another.
206. 6/10/02	2 3 24	Paroa ..	..	..	..	Leviathan Freehold G.D. Co.
233. 24/11/02	5 0 0	Stillwater ..	..	..	..	Charles Josh. Gibbs.
265. 22/12/02	2 3 0	Paroa ..	..	..	..	Leviathan Freehold G.D. Co.
268. 22/12/02	67 0 8	South Beach	XVI.	Greymouth	..	Stony and Mosquito Leads Gold-dredging Company.
338. 22/10/00	58 0 0	Maori Gully	XV.	Arnold ..	..	Maori Gully Gold-dredging Co.
339. 22/10/00	89 1 0	"	XIV.	" ..	..	E. J. Smith and H. J. Bignell.
366. 19/11/90	37 0 32	South Beach	XVI.	Greymouth	..	Leviathan Freehold G.D. Co.
367. 19/11/90	30 2 25	Grey River ..	X.	Arnold ..	..	Grey River Extended G.D. Co.
368. 19/11/90	82 3 26	South Beach	III.	Waimea ..	..	D. M. Luckie and 9 others.
370. 19/11/90	100 0 0	Barrytown ..	I.	Waiwhero	..	Henry Philip Hill.
8. 7/1/01	52 2 12	Grey River ..	IX.	Mawhera-nui	..	Grey River Gold-dredging Co.
11. 7/1/01	98 1 8	"	X.	Arnold ..	..	Thomas Jones.
95. 16/4/01	43 0 10	New River ..	II.	Hohonu ..	..	Maori Queen Gold-dredging Co.
145. 25/5/01	95 3 15	South Beach	XVI.	Greymouth	..	Leviathan Gold-dredging Co.
147. 27/5/01	48 2 31	North Beach	IV.	Cobden ..	..	John Druce and W. J. Joyce.
154. 20/5/01	75 1 10	New River ..	II.	Hohonu ..	..	..
213. 22/7/01	84 0 20	North Beach	IV.	Cobden ..	..	John Druce and W. J. Joyce.

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MINING PRIVILEGES—*continued.*

Number and Date of License.	Area.	Locality.	Block.	Survey District.	Name of Claim.	Name of Registered Owner.
NELSON AND WEST COAST GOLDFIELDS—*continued.*						
STAFFORD AND GOLDSBOROUGH.						
	A. R. P.			*Alluvial Claims.*		
548. 20/11/02	12 0 0	Waimea ..	XV.	Waimea ..	..	Samuel Perry.
536. 30/10/02	5 0 0	Scandinavian Hill	XIV.	" ..	..	Hugh Linklates.
534. 30/10/02	4 0 0	Stafford ..	"	" ..	..	George and Henry Linklater.
532. 30/10/02	7 0 0	Waimea ..	XV.	" ..	..	Francis and Mary Carmini and Henry L. Picket.
531. 30/10/02	2 0 0	" ..	"	" ..	..	T. Dunne and F. Rochford.
529. 30/10/02	5 0 0	Stafford ..	XIV.	" ..	..	George Pimpernell.
525. 30/10/02	2 0 0	German Gully	"	" ..	..	Ah Joe and Ah Buck.
519. 9/10/02	3 0 0	"	"	" ..	..	P. Romas and P. Franzini.
510. 4/9/02	9 0 0	Kelly's Ter.	"	" ..	..	Joseph Kidd, James Lincoln, and Daniel Twoomey.
501. 24/7/02	10 0 0	Waimea ..	XV.	" ..	..	Frederick Henne.
498. 19/6/02	3 0 0	Arahura Flat	"	Arahura ..	..	Gladius and Eugene Rebay and John Rebustette.
461. 20/3/02	4 0 0	German Gully	XIV.	Waimea ..	..	Joseph Manzoni.
457. 20/2/02	6 0 0	Red Jack's ..	"	" ..	..	Chick Sun and Tank Que.
440. 19/2/01	20 0 0	Waimea ..	XV.	" ..	..	Waimea Hydraulic Sluicing Co.
436. 21/11/01	3 0 0	Middle Branch	"	" ..	..	Jane McWhirter, W. Hanrahan, and Joseph Dolph.
433. 21/11/01	3 0 0	German Gully	XIV.	" ..	..	Joe Din, Ah Duck, Ah Hung.
427. 21/11/01	5 0 0	Italian Gully	"	" ..	..	M. Bernson and F. Linborn.
410. 19/9/01	2 0 0	German Gully	"	" ..	..	Joseph Manzoni.
407. 19/9/01	5 0 0	5th and 6th Terraces	"	" ..	..	J. Mundy, F. Bernhard, and Thomas Low.
399. 19/9/01	4 0 0	Swindler's Terrace	"	" ..	..	John Gallagher.
396. 19/9/01	20 0 0	Italian Flat..	XV.	" ..	..	Stephen R. Honey.
354. 16/5/01	2 0 0	Fitzhenry's Terrace	"	" ..	..	Albert Tomasi.
349. 16/5/01	3 2 0	Middle Branch	"	" ..	..	H. J. Atkinson, M. Fitzgerald, and P. Toker.
348. 16/5/01	2 2 0	Cameron's Gully	"	" ..	..	Bartholomew Cox.
335. 18/4/01	2 0 0	Greenstone Road	"	" ..	..	T. Dunne and F. Rochford.
326. 21/3/01	3 2 14	Callaghan's..	"	" ..	..	J. Dolph and J. Manzoni.
290. 28/8/89	4 0 0	J. Gallagher	"	" ..	..	J. Gallagher.
269. 15/11/00	2 0 0	Tunnel Ter...	XIV.	" ..	..	Frederick Martini.
256. 18/10/00	6 0 0	Middle Branch	XV.	" ..	..	R. Straight, H. Atkinson, and H. Burger.
231. 26/7/00	2 0 0	Callaghan's..	"	" ..	..	George Darbyson.
207. 28/6/00	10 0 0	Pakihi Swamp	"	" ..	..	Stephen R. Honey.
70. 24/8/99	2 0 0	Lamplough Gully	"	" ..	..	Ah Yum and Yep Tum.
66. 24/8/99	2 0 0	Tunnel Ter...	XIV.	" ..	..	W. Mitchell, sen., W. Mitchell, jun., P. and J. Mitchell.
65. 15/12/99	96 3 0	Waimea ..	XV.	" ..	..	Wheel of Fortune G.M. Co.
62. 24/8/99	3 0 0	Middle Branch	"	" ..	..	G. Rebay and J. Rebustette.
44. 15/6/99	2 0 0	"	"	" ..	..	William Lenihan.
42. 15/6/99	30,000 sq. ft.	Kapitea Crk.	"	" ..	..	W. Hyndman, J. and G. Hunt.
41. 15/6/99	25,000 sq. ft.	"	"	" ..	..	John Dinan, Thomas Hunt, and Charles Brown.
37. 18/5/99	2 0 0	Pretty Woman's	XIV.	" ..	..	L. Morgan and J. Isbester.
17. 13/4/99	11 18 0	Waimea ..	XV.	" ..	..	Joseph Dolph.
12. 27/4/95	6 0 0	Middle Branch	"	" ..	..	D. Thompson, G. Burger, R. Rothwell, R. Thompson, W. Boyd, and T. McDonald.
10. 31/3/92	2 0 0	Callaghan's..	"	" ..	..	Stephen R. Honey.
19362. 26/8/98	3 0 0	Cornishman's Gully	"	" ..	..	Sung Lee, J. Sung, and party.
91315. 17/8/98	6 0 0	Callaghan's..	"	" ..	..	P. Martini, J. Manzoni, and J. Dolph.
91307. 7/8/98	6 0 0	German Gully	"	" ..	..	S. Rowe, Debau, A. Gamboszi, and party.
84237. 20/1/98	6 0 0	Middle Branch	"	" ..	..	Jeremiah O'Sullivan and party.
84241. 26/1/98	2 0 0	Fitzhenry's Terrace	"	" ..	..	B. Lanini and A. Tomasi.
62689. 6/5/96	4 0 0	Parihaki Swamp	"	" ..	..	Stephen and Joseph Havill.
62651. 3/6/96	4 0 0	Italian Flat..	"	" ..	..	G. Darbyson and party.
57354. 24/7/95	2 0 0	Middle Branch	"	" ..	..	Robert Cook.
57543. 31/7/95	6 0 0	Callaghan's..	"	" ..	..	Robert Anderson.
57350. 26/6/95	2 0 0	Foxes ..	"	" ..	..	J. and R. Newton.
57518. 29/5/95	6 0 0	Greenstone Road	"	" ..	..	Daniel Griffen and party.
57510. 15/5/95	2 0 0	Middle Branch	"	" ..	..	J. Burke and G. Punch.
57508. 1/5/95	4 0 0	Stony Creek	"	" ..	..	P. McGrath and party.
53236. 17/10/94	4 0 0	Callaghan's..	"	" ..	..	W. Hyndman and party.

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MINING PRIVILEGES—*continued.*

Number and Date of License.	Area.	Locality.	Block.	Survey District.	Name of Claim.	Name of Registered Owner.
	A. R. P.					
NELSON AND WEST COAST GOLDFIELDS—*continued.*						
STAFFORD AND GOLDSBOROUGH—*continued.*						
		Alluvial Claims—continued.				
53230. 29/8/94	2 0 0	Callaghan's ..	XV.	Waimea ..	..	F. Pickering and A. Johanson.
45698. 11/7/94	5 0 0	" ..	"	" ..	..	C. Johanson and party.
45667. 28/2/94	2 0 0	Fitzhenry's Terrace	"	" ..	..	Lorenzo Bertie.
45624. 25/10/93	2 0 0	Callaghan's..	"	" ..	..	C. Olsen and J. Hyndman.
45612. 24/9/93	2 0 0	Greenstone Road	"	" ..	..	Thomas Delphano.
45632. 15/11/93	2 0 0	Callaghan's..	"	" ..	..	C. Johanson and party.
45528. 1/3/93	3 0 0	Italian Flat..	"	" ..	..	Joseph Mansoni and party.
45529. 1/3/93	4 0 0	" ..	"	" ..	..	"
39744. 24/8/92	2 0 0	Waimea ..	"	" ..	..	Chow Mon and Ah Mun.
39754. 31/8/92	6 0 0	Callaghan's..	"	" ..	..	T. Helens and W. J. McIlroy.
39703. 20/4/92	2 0 0	" ..	"	" ..	..	S. R. Honey.
37295. 9/3/92	5 0 0	Greenstone Road	"	" ..	..	D. Thomson and party.
37244. 2/12/91	4 0 0	Ditto ..	"	" ..	..	T. F. Jones and party.
34792. 24/9/91	6 0 0	Callaghan's..	"	" ..	..	John Stewart.
34791. 24/9/91	2 0 0	" ..	"	" ..	..	John Stenhouse and party.
34774. 2/9/91	4 0 0	" ..	"	" ..	..	Cuthbert Priest and party.
34776. 5/9/91	6 0 0	" ..	"	" ..	..	J. J. Burns and party.
297. 10/4/90	4 0 0	" ..	"	" ..	..	J. Dolph and party.
24958. 3/9/90	4 0 0	Italian Flat..	"	" ..	..	M. Bernson and party.
15700. 20/6/89	4 0 0	Callaghan's Flat	"	" ..	..	A. Morretti and party.
15688. 6/6/89	6 0 0	Ditto ..	"	" ..	..	J. Dolph and party.
15630. 31/1/89	3 0 0	Middle Branch	"	" ..	..	E. Johnston and party.
9993. 8/11/88	2 0 0	Fitzhenry's Terrace	"	" ..	..	Charles Deas and party.
9986. 8/11/88	6 0 0	Middle Branch	"	" ..	..	P. Kiely and party.
9992. 8/11/88	4 0 0	Fitzhenry's Terrace	"	" ..	..	John White and party.
9995. 6/12/88	4 0 0	Ditto ..	"	" ..	..	Robert Johnston and party.
9991. 8/11/88	4 0 0	" ..	"	" ..	..	Thomas Brown and party.
9989. 1/11/88	6 0 0	" ..	"	" ..	..	Denis Maher and party.
44743. 11/6/83	6 0 0	Red Jack's Gully	"	" ..	..	Philip Williams.
36662. 26/3/84	2 0 0	Goldsborough	"	" ..	..	M. Flynn and party.
36640. 21/2/84	2 0 0	German Gully	XIV.	" ..	..	Paul Arnerich and party.
91375. 26/10/98	2 0 0	Fourth Ter...	"	" ..	..	P. Peterson and D. Thomson.
91322. 17/8/98	2 0 0	Humphry's ..	"	" ..	..	Sue Bun and Ah Shue.
84980. 23/7/98	3 0 0	Gilbert's Terrace	"	" ..	..	Young Moy and party.
84952. 21/4/98	4 0 0	Chesterfield..	"	" ..	..	Thomas Furlong and party.
84924. 2/2/98	2 0 0	German Gully	"	" ..	..	Sung Sin and Lue Hung.
84902. 9/12/97	5 0 0	Ballarat Hill	"	" ..	..	John Schilling and party.
77271. 30/9/97	2 0 0	Pretty Woman's	"	" ..	..	G. and R. Taylor.
77283. 20/5/97	5 0 0	Taipo ..	"	" ..	..	Henry Cotheral and party.
72860. 25/1/97	6 0 0	Stafford ..	"	" ..	..	T. O'Brien and party.
62998. 31/7/96	4 0 0	McKinley's Terrace	"	" ..	..	P. Hargreaves and party.
62979. 29/9/96	2 0 0	German Gully	"	" ..	..	G. and S. Glasson.
62974. 31/8/96	2 0 0	Kapitea Creek	"	" ..	..	R. Lee and M. Reedy.
62963. 31/7/96	3 0 0	Chickenhearted Terrace	"	" ..	..	Ah Chow and Ah Gow.
62946. 9/5/96	3 0 0	Scandinavian Terrace	"	" ..	..	George Pimpernell.
62940. 5/5/96	2 0 0	Arahura ..	"	Arahura ..	..	W. and J. Olderog.
62933. 18/3/96	6 0 0	Kelly's Terrace	"	Waimea ..	..	Daniel Sullivan and party.
53997. 28/11/95	2 0 0	O'Neil's Gully	"	" ..	..	G. Duncan.
53980. 21/8/95	4 0 0	Tunnel Terrace	"	" ..	..	W. H. Teague and party.
53968. 27/5/95	2 0 0	Arahura ..	"	Arahura ..	..	Daniel Dwyer and party.
53919. 7/12/94	1 2 0	Gillian's Gully	"	Waimea ..	..	James Davidson.
37385. 24/4/94	2 0 0	German Gully	"	" ..	..	Joseph Mansoni.
37316. 28/2/93	3 0 0	Tunnel Ter...	"	" ..	..	Peter Mitchell.
34899. 28/11/92	6 0 0	Gillian's Gully	"	" ..	..	Thomas Sell and party.
34886. 5/11/92	2 0 0	Humphry's ..	"	" ..	..	Wm. Yea Poot and Gun Hung.
34872. 1/9/92	5 0 0	Piper's Flat..	"	" ..	..	J. N. Smyth.
30740. 13/3/91	6 0 0	Blake's Terrace	"	" ..	..	Edward Quinn and party.
21066. 24/4/90	2 0 0	Tunnel Terrace	"	" ..	..	William Martin.
21041. 16/2/89	3 0 0	Taipo (near Kumara)	"	" ..	..	Michael Crowley and party.
21019. 8/10/89	5 0 0	Ballarat Hill	"	" ..	..	Sew Ying and party.
W290. 12/7/89	4 0 0	Swindler's Ter.	"	" ..	..	John Gallagher.
12590. 12/7/89	5 0 0	Tucker's Gully	"	" ..	..	Ah Kie, Ah Wah, and Ah Young.
12588. 12/7/89	2 0 0	"	"	" ..	..	Joe Cum and Fong Lee.
12543. 22/2/89	3 0 0	Tunnel Ter...	"	" ..	..	J. Gardiner and P. Arnerich.

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MINING PRIVILEGES—*continued.*

Number and Date of License.	Area.	Locality.	Block.	Survey District.	Name of Claim.	Name of Registered Owner.
	A. R. P.					
NELSON AND WEST COAST GOLDFIELDS—*continued.*						
STAFFORD AND GOLDSBOROUGH—*continued.*						
			Dredging Claims.			
489. 19/6/02	3 0 0	Kelly's Ter.	XIV.	Waimea ..	..	Ronald Sutherland.
487. 19/6/02	7 0 0	"	"	" ..	..	A. Jamieson, G. Taylor, sen., R. Fleuty, G. Taylor, jun., J. Meriwether, and R. Cleaver.
481. 19/6/02	73 2 36	Auckland Beach	X.	Arahura ..	..	Joseph Taylor.
480. 19/6/02	83 2 36	Ditto ..	"	" ..	..	Edmund Wickes.
479. 19/6/02	84 1 32	" ..	"	" ..	..	John Caldwell.
478. 19/6/02	99 1 0	" ..	"	" ..	..	James D. Gillies.
347. 16/5/01	57 1 0	Waimea ..	IX., XIV.	Waimea ..	..	T. V. Byrne.
291. 17/1/01	52 0 0	" ..	..	" ..	..	Alexander Gibson.
200. 28/6/00	83 2 16	" ..	..	" ..	..	Chas. Davey and S. R. Honey.
199. 28/6/00	60 1 26	Middle Branch	..	" ..	..	Stafford-Waimea G.D. Co.
W272. 28/7/87	16 0 0	Taipo ..	..	" ..	..	Teremakau Quartz-mining Co.
W271. 28/7/87	16 2 4	" ..	..	" ..	..	"
W269. 28/7/87	16 2 4	" ..	..	" ..	..	"
			HOKITIKA.			
			Alluvial Claims.			
304. 24/4/00	5 0 0	Sandy Gully	..	..	..	Nicholas Beros.
395. 19/5/00	2 0 0	Rimu ..	..	..	..	William Surgenor.
437. 13/7/00	9 0 0	Brighton Ter.	..	..	..	John Duske and party.
466. 24/8/00	3 0 0	Back Creek ..	..	..	..	William Wieblits and party.
467. 24/8/00	5 0 0	Brennan's Crk.	..	..	..	Matthew Wouldes.
498. 24/8/00	11 0 37	Blue Spur ..	II.	Kanieri ..	..	Augustus Boys.
520. 5/10/00	3 0 0	Back Creek ..	..	..	..	J. H. Spence and Robert Knight.
544. 2/4/00	3 0 0	Brighton Ter.	..	..	..	Patrick Douglas.
546. 2/11/00	18 0 0	Seddon's Ter.	..	..	..	John Johnston and party.
593. 15/1/01	1 0 32	Tucker Flat..	..	..	..	John F. and Fred. A. Bergmann.
597. 15/1/01	10 0 0	Seddon's Ter.	..	..	..	John Johnston and J. Stewart.
171. 17/11/99	3 2 0	Woodstock ..	..	Kanieri ..	..	Willetts and Shannon.
429. 29/6/00	1 2 0	" ..	..	" ..	..	J. Willetts and party.
422. 25/1/87	15 0 0	Kanieri Forks	..	..	Kanieri Lake Water-race and Mining Co.	Charles Davey and others.
47. 22/3/97	50 0 0	Waiho ..	XI.	Waiho ..	..	Waiho H.S. and Water-race Co.
451. 8/7/97	9 0 0	Kanieri ..	I.	Kanieri ..	..	William Noble and others.
48. 29/1/98	75 0 0	S. Westland	IX.	Gillespie's	..	J. Strachan Bridges.
456. 3/11/98	11 0 9	..	I.	Kanieri ..	..	Richard Allan Harcourt.
2. 24/2/99	3 0 0	Seddon's Ter.	..	..	..	Thomas McDonald and party.
6. 9/3/99	3 0 0	Back Creek ..	..	..	..	Christian Neilsen and party.
11. 23/3/99	5 0 0	Mahinapua Creek	..	..	..	John Johnson.
14. 23/3/99	2 0 0	Back Creek ..	..	..	..	Philip Boyd and party.
16. 23/3/99	5 0 0	Mahinapua Stream	..	..	..	Henry Butland.
25. 6/4/99	5 0 0	Mahinapua Creek	..	..	..	William Macfarlane.
33. 6/4/99	6 0 0	Seddon's Ter.	..	..	..	Richard Wild and John McKay.
34. 6/4/99	3 0 0	"	..	..	..	John Duske and party.
35. 6/4/99	4 0 0	Arahura Flat	..	..	..	William Brown and party.
59. 20/4/99	2 0 0	Mahinapua Creek	..	..	..	William Schoemaker and another.
66. 4/5/99	4 0 0	Arahura ..	..	..	..	Richard A. Harcourt and party.
80. 26/5/99	4 0 0	Arahura Flat	..	..	..	Grant Harcourt and another.
90. 22/6/99	5 0 0	Tucker Flat..	..	..	..	David John and T. Hutchison.
101. 21/7/99	4 0 0	Back Creek ..	..	..	..	Robert Knight and party.
105. 26/5/99	100 0 0	Arahura ..	III.	Kanieri ..	..	Humphrey's H.S. Co. (now Consolidated Goldfields of N.Z.).
106. 26/5/99	100 0 0	" ..	"	" ..	..	Consolidated Goldfields of N.Z.
107. 26/5/99	100 0 0	" ..	"	" ..	..	"
108. 26/5/99	100 0 0	" ..	II.	" ..	..	"
116. 18/8/99	5 0 0	Kanieri Forks	..	..	..	John Roberts and party.
167. 17/11/99	5 0 0	"	..	..	..	Lachlan McLachlan.
210. 6/4/99	3 0 0	Keenan's Gully	..	..	..	Frederick George and party.
229. 8/5/99	1 3 8	McIntyre's Gully	..	..	..	William Milner and J. Forsyth.
243. 9/3/00	3 0 0	Seddon's Ter.	..	..	..	John O'Donnell and party.
264. 24/4/00	100 0 0	Rimu ..	V., IX.	Kanieri ..	..	Joseph Grimmond.
265. 24/4/00	97 0 2	" ..	V.	" ..	..	Martin Cashman.
294. 6/4/00	1 2 0	Brennan's Crk.	..	..	..	Ye Mun and party.
647. 22/2/01	5 0 0	Hauhau ..	..	..	..	Robert Mark Brown.
658. 8/3/01	4 0 0	" ..	..	..	..	Lucy J. and W. M. Harcourt.
701. 7/6/01	7 3 32	Seddon's Ter.	..	..	..	William Berry and party.
718. 5/7/01	2 0 0	Brighton Ter.	..	..	..	Charles Sears.
775. 20/9/01	4 0 0	Rimu ..	..	..	..	Samuel Silcock.
799. 1/11/01	6 0 0	Kanieri ..	..	..	..	Lancelot Huff and party.

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MINING PRIVILEGES—*continued.*

Number and Date of License.	Area.	Locality.	Block.	Survey District.	Name of Claim.	Name of Registered Owner.
	A. R. P.					
NELSON AND WEST COAST GOLDFIELDS—*continued.*						
HOKITIKA—*continued.*						
***Alluvial Claims*—continued.**						
818. 6/12/01	66 0 14	Humphrey's	III.	Kanieri ..	..	Humphrey's Hydraulic S. Co.
821. 6/12/01	5 0 0	Hauhau ..	..	..	..	Hugh McKinnon.
850. 24/1/02	3 0 0	Kanieri Forks	..	..	..	Richard Lemain and party.
890. 21/3/02	5 0 0	South Hokitika	..	..	..	John Beros.
895. 21/3/02	4 0 0	Kanieri Forks	..	..	..	George Pfahlert.
902. 4/4/02	3 3 0	Blue Spur ..	..	..	..	Patrick McQuilkin and party.
927. 2/5/02	2 0 0	Back Creek ..	..	..	..	James H. Spence and party.
945. 6/6/02	6 0 0	"	..	..	..	Peter Hansen and party.
946. 6/6/02	10 0 0	Woodstock ..	..	..	..	Francis L. Kirwan and party.
958. 4/7/02	19 0 0	Arahura Flat	..	..	..	Lucy Jane Harcourt.
962. 18/7/02	10 0 0	Kanieri River	..	..	..	John Stewart and party.
968. 1/8/02	92 3 16	Seddon's Ter., Back Creek	V., IX.	Kanieri ..	..	Henry Gilfillan, jun.
969. 1/8/02	95 2 21	Ditto ..	V.	" ..	..	David Abbott.
970. 1/8/02	90 0 31	"	"	" ..	..	Duncan Edward Clerk.
971. 1/8/02	97 0 24	"	I., V.	" ..	..	Wilfred Ewing Bruce.
972. 1/8/02	6 0 0	Back Creek ..	..	..	..	John Anderson.
975. 1/8/02	7 0 0	" ..	..	..	..	Anna C. Moloney and party.
964. 18/7/02	12 0 0	Seddon's Ter.	..	..	..	Arthur Clifton and party.
982. 15/8/02	6 0 0	Brighton Ter.	..	..	..	Thos. Brown and William Green.
983. 15/8/02	4 0 0	Back Creek ..	..	..	..	H. Hartke and Robert Thomson.
984. 15/8/02	3 0 0	Blue Spur ..	..	..	..	Augustus Boys.
988. 15/8/02	4 0 0	Back Creek ..	..	..	..	John Duake and party.
998. 5/9/02	6 0 0	" ..	..	..	..	Arthur John Knowles and party.
1000. 5/9/02	4 0 0	" ..	..	..	..	R. Hyndman and D. W. Wells.
1008. 26/9/02	4 0 0	Brighton Ter.	V.	Kanieri ..	..	John Druce and party.
1009. 26/9/02	6 0 0	"	"	" ..	..	Robert G. Surgenor and Frederick Willoughby.
1014. 10/10/02	6 0 0	Blue Spur ..	I.	" ..	..	W. H. Harvey and T. McDonald.
1032. 5/12/02	12 0 0	Seddon's Ter.	..	..	..	William O'Connor and party.
Dredging Claims.						
254. 24/3/00	99 0 17	Kanieri ..	I.	Kanieri ..	..	Richard Wild.
255. 6/4/00	100 0 0	" ..	I., V.	" ..	..	Hokitika River Dredging Co.
682. 12/4/01	28 2 21	Blue Spur ..	I.	" ..	..	Hauhau Creek Dredging Co.
688. 26/4/01	10 0 0	Kanieri River	..	..	..	John Kulsen and party.
694. 10/5/01	97 1 32	Blue Spur ..	II.	Kanieri ..	..	Augustus Boys.
747. 2/8/01	69 3 21	Woodstock ..	I., V.	" ..	..	Woodstock Gold-dredging Co.
943. 6/6/02	88 3 2	Kanieri ..	"	" ..	..	Commissioner's Flat G.D. Co.
978. 15/8/02	37 0 0	Three-mile ..	XIII.	Waimea ..	Montezuma ..	James Park and Arthur Boyes.
979. 15/8/02	96 0 0	" ..	X.	" ..	..	J. J. Caldwell and James Cropper.
1006. 23/9/02	100 0 0	Wataroa ..	XV. Wataroa III. Waitangi-taona		..	Albert Everett.
342. 19/5/00	80 0 0	Totara Lagoon	XI.	Mahinapua	..	Aylmer Lead G.D. Co.
350. 24/4/00	20 0 0	Hauhau Creek	..	..	..	Hauhau Creek Dredging Co.
445. 30/7/00	100 0 0	..	I.	Kanieri ..	..	Great Woodstock G.D. Co.
447. 30/7/00	100 0 0	..	V.	" ..	..	Hokitika Junction Dredging Co.
460. 21/8/00	56 1 37	..	I.	" ..	..	Hauhau Creek Dredging Co.
462. 17/8/00	84 2 19	..	V.	" ..	..	Woodstock Gold-dredging Co.
480. 4/9/00	100 0 0	..	IV. Mahinapua I. Kanieri		..	John Magnus.
514. 4/10/00	87 1 17	Mahinapua	XI.	Mahinapua	..	Mahinapua G.D. Co.
557. 27/7/00	23 2 0	Kanieri ..	I.	Kanieri ..	..	Great Woodstock G.D. Co.
572. 7/12/00	99 3 28	" ..	V.	" ..	..	Charles Evans.
573. 7/12/00	41 3 31	" ..	I.	" ..	Shenandoah No. 2	Philip James Perry.
575. 7/12/00	96 2 8	" ..	"	" ..	..	John Staines.
576. 7/12/00	100 0 0	" ..	V.	" ..	..	William Albert Stapleton.
577. 7/12/00	38 0 18	" ..	I.	" ..	..	John McKenzie.
619. 28/1/01	84 0 0	" ..	III., IV., VII., VIII.	" ..	..	Electric Dredging Company.
620. 28/1/01	84 0 0	" ..	VIII.	" ..	..	"
621. 28/1/01	84 0 0	" ..	"	" ..	..	"
622. 28/1/01	84 0 0	" ..	"	" ..	..	"
623. 28/1/01	74 0 0	" ..	"	" ..	..	"
624. 28/1/01	71 0 32	" ..	"	" ..	..	"
643. 19/2/01	52 1 32	" ..	I.	" ..	..	William G. Cooper and party.
645. 19/2/01	100 0 0	" ..	"	" ..	..	Thomas Furlong.
Ross.						
Alluvial Claims.						
T878. 2/10/89	10 0 0	Ross ..	II.	Totara ..	..	Mont d'Or G.M. & Water-race Co.
T879. 2/10/89	21 1 32	" ..	"	" ..	..	"
T623. 14/2/91	7 0 0	" ..	"	" ..	..	"
T768. 1/3/84	25 0 0	" ..	"	" ..	..	"
T774. 1/5/84	43 0 8	" ..	"	" ..	..	Mont d'Or G.M. & Water-race Co.
T906. 15/12/99	100 0 0	" ..	"	" ..	..	"
1. 27/2/99	2 0 0	Donnelly's Crk.	"	" ..	..	William and S. Pryor.
282. 9/8/01	4 0 0	Ross ..	"	" ..	..	Antonio Traversi.
386. 21/9/01	5 0 0	Lake Ianthe	..	..	..	J. and A. Allen.
432. 8/2/02	5 0 0	Donnelly's Crk.	II.	Totara ..	..	Thomas Pryor.
467. 22/3/02	2 0 0	Totara ..	"	" ..	..	Albert John Brown.
496. 24/5/02	2 0 0	Donnelly's Crk.	"	" ..	..	W. E. Phillips.
513. 14/12/02	5 0 0	"	"	" ..	..	John Smith.

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MINING PRIVILEGES—*continued.*

Number and date of License.	Area. A.	R.	P.	Locality.	Block.	Survey District.	Name of Claim.	Name of Registered Owner.
NELSON AND WEST COAST GOLDFIELDS—*continued.*								
Ross—*continued.*								
Dredging Claims.								
T748. 1/3/83	60	0	0	Donoghue's	II.	Totara ..	..	Prince of Wales G.D. Co.
176. 23/6/00	100	0	0	Mikonui ..	I.	" ..	..	Kohinoor G.D. Co.
241. 17/11/00	31	2	8	Donnelly's Crk.	II.	" ..	..	George Woolhouse and others.
242. 17/11/00	100	0	0	Donoghue's	I.	" ..	..	Gardiner D. Wilson.
255. 1/12/00	74	0	0	Mikonui ..	"	" ..	..	William Wardell.
243. 17/11/00	60	0	0	Donoghue's	"	" ..	..	Prince of Wales G.D. Co.
257. 1/12/00	76	0	8	Mikonui ..	"	" ..	..	John Magnus.
248. 17/11/00	100	0	0	" ..	"	" ..	..	F. H. King.
257. 1/12/00	57	1	8	" ..	"	" ..	..	John Magnus.
260. 1/12/00	19	0	32	Totara ..	II.	" ..	..	G. D. Wilson.
259. 1/12/00	74	0	0	" ..	"	" ..	..	George Guild and others.
286. 23/3/01	40	0	0	..	XIV.	Mahinapua	..	Totara Shellback G.D. Co.
318. 15/6/01	80	0	0	..	XI.	"	..	Thos. H. James and A. Burnett.
305. 25/5/01	73	0	0	Totara ..	I.	Totara ..	..	Samuel Gibbons and others.
338. 24/8/01	39	2	0	Donnelly's Crk.	II.	" ..	..	G. and M. Manira.
354. 21/9/01	80	0	0	..	XII.	Mahinapua	..	Alfred Bing and others.
357. 21/9/01	80	0	0	..	XIV.	"	..	"
359. 21/9/01	80	0	0	..	"	"	..	"
363. 21/9/01	80	0	0	..	"	"	..	"
366. 21/9/01	80	0	0	..	"	"	..	"
367. 21/9/01	80	0	0	Donnelly's Crk.	II.	Totara ..	..	Ross Day Dawn G.D. Co.
385. 2/11/01	80	0	0	..	XIV.	Mahinapua	..	Alfred Bing and others.
386. 2/11/01	80	0	0	..	"	"	..	"
411. 14/12/01	40	0	0	Jones Creek	II.	Totara ..	..	Totara Shellback G.D. Co.
419. 11/1/02	80	0	0	..	XII.	Mahinapua	..	Alfred Bing and others.
420. 11/1/02	80	0	0	..	"	"	..	"
421. 11/1/02	80	0	0	..	"	"	..	"
428. 25/1/02	39	3	27	..	I.	Totara ..	..	John Booth.
429. 25/1/02	100	0	0	..	II.	" ..	..	Fergus Macleod.
499. 7/6/02	91	0	0	..	XIV.	Mahinapua	..	Aylmer Lead G.D. Co.
510. 23/8/02	60	0	0	Mikonui ..	I.	Totara ..	..	Fergus Ferguson Macleod.
Quarts Claim.								
905. 23/12/96	50	0	0	Donnelly's Crk.	II.	Totara ..	..	Antonio Zalla.
Okarito.								
Dredging Claims.								
O15. 12/9/00	75	0	0	Okarito ..	VIII.	Okarito ..	..	Lucio Zala.
O17. 12/9/00	50	0	0	" ..	"	" ..	..	"
O16. 12/9/00	75	0	0	" ..	"	" ..	..	Henry Friend.
O22. O23. 12/9/00	100	0	0	" ..	"	" ..	..	William McLeod.
O65. 27/8/01	75	0	0	Gillespie's Beach	IX.	Gillespie's	..	Henry Butland.
O59. 28/11/01	100	0	0	Five-mile ..	XIV.	Okarito ..	..	A. N. Field.
O57. 28/11/01	40	0	0	Okarito ..	XII.	" ..	..	Christopher Smith.
O56. 28/11/01	40	0	0	" ..	"	" ..	..	"
O60. 1/2/02	100	0	0	Saltwater ..	XIV.	Mount One-one Sub-district	..	Fergus McLeod.
O62. 1/5/02	100	0	0	Five Mile ..	"	Okarito ..	..	William Liddell.
Alluvial Claims.								
O50. 31/5/99	50	0	0	Waiho ..	XI.	Waiho ..	..	Westland D. and S. Co.
151. 19/7/01	20	0	0	" ..	"	" ..	..	"
O45. 27/8/02	100	0	0	" ..	"	" ..	..	"
185. 28/11/01	4	0	0	" ..	..	" ..	..	"
7. 31/5/99	10	0	0	Bullock Creek	..	..	..	W. H. Harris and G. Wise.
46. 1/2/00	3	0	0	Waiho ..	..	Waiho ..	..	John Irwin.
168. 28/11/01	5	0	0	Mapourika ..	..	" ..	..	Martin Cunningham.
178. 28/11/01	5	0	0	Waiho ..	XI.	" ..	..	W. J. Taylor and E. L. Batson.
184. 28/11/01	4	0	0	" ..	..	" ..	..	Alexander Graham.
OTAGO AND SOUTHLAND GOLDFIELDS.								
Naseby.								
Alluvial Claims.								
122. 11/7/90	16	0	20	Section 63 ..	I.	St. Bathan's	..	Bank of New South Wales.
180. 5/5/93	29	2	32	" 2 ..	VII.	"	..	United M. and E. Water-race Co.
183. 23/2/95	24	0	0	" 27 ..	II.	"	..	"
150. 12/2/95	18	2	26	..	Pt. of I.	Mt. Buster	..	Mt. Buster Mining Co.
160. 13/10/96	19	2	28	Section 28 ..	II.	St. Bathan's	..	John Ewing.
140. 30/11/96	39	0	30	" 71 ..	I.	"	..	"
162. 23/9/97	95	2	0	" 74 ..	"	"	..	"
166. 17/2/98	75	3	34	Secs. 80, 24 ..	I., IV.	"	..	"
167. 17/2/98	93	0	25	Section 81 ..	I.	"	..	"
196. 27/9/98	14	3	0	" 12 ..	II.	Naseby ..	..	John Hore.
31222. 17/12/90	2	0	0	Two-mile Ck., Branch Gully	..	Macrae's ..	..	John Harcus.

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MINING PRIVILEGES—*continued.*

Number and Date of License.	Area.	Locality.	Block.	Survey District.	Name of Claim.	Name of Registered Owner.
		OTAGO AND SOUTHLAND GOLDFIELDS—*continued.*				
		NASEBY—*continued.*				
	A. R. P.	*Alluvial Claims*—continued.				
51. 27/3/99	2 0 0	Shepherd's Hut, Puketoi Run	..	..	..	Patrick McCluskey and John Joseph McCluskey.
77. 25/4/99	9 0 0	Run 253A ..	..	Long Valley	..	B. Diamond, D. Diamond, and R. Stringer.
86240. 22/2/98	2 0 0	Head of Main Gully	..	Naseby ..	..	Joe Fong.
81306. 24/8/99	2 0 0	West side of Main Gully	..	" ..	..	"
84151. 1/1/98	6 0 0	Johnston's Crk.	..	Near Manuherikia	..	Neil Nicholson.
118. 3/5/99	2 0 0	Section 43 ..	II.	Highlay ..	..	John Harcus.
169. 15/8/99	30 0 26	" 8 ..	VII.	St. Bathan's	..	Scandinavian W.R. Co. (Rgd.).
		" 33 ..	II.			
172. 17/8/99	20 0 0	" 1 ..	I.	Nenthorn	..	F. G. Laing, C. Allen, T. Kirk, J. Samson, Donald Ross, John Mone, John Symes.
188. 25/8/99	8 0 0	" 18 ..	X.	Maerewhenua	..	J. Kennedy, H. Butt, J. Carling.
214. 3/10/99	14 0 0	Caledonian Gully	..	Patearoa ..	..	Joseph Hambly, John Hambly.
219. 29/9/99	8 0 0	Section 9 ..	X.	Maerewhenua	..	James Kennedy, E. G. Carling.
257. 31/10/99	47 3 10	" 5 ..	XIII.	Long Valley	..	J. McNeil, G. R. Story, S. Brookes
258. 31/10/99	50 0 0	" 4 ..	"	"		
268. 14/11/99	8 0 0	Cook's Flat..	..	Kyeburn Diggings	..	A. M. Beer, Philip Beer, and L. W. Beer.
271. 14/11/99	20 0 0	Coalpit Gully	..	Naseby ..	..	Wm. Beck, J. Hewitt, J. Beck.
279. 10/11/99	7 2 37	Section 65 ..	I.	St. Bathan's	..	Harry Ercell, John W. Coulson.
314. 23/11/99	2 0 0	" 10 ..	XII.	Rock-and-Pillar	..	P. Patterson, W. Sasse.
320. 22/12/99	8 2 0	Secs. 58, 120	IX.	Maerewhenua	..	Peter Alfred Botting.
324. 19/1/00	17 3 0	Section 29 ..	II.	St. Bathan's	..	Scandinavian W.R. Co. (Rgd.).
351. 6/2/00	2 0 0	Two-mile Gully	..	Budle ..	..	Ge Chong.
355. 6/2/00	2 0 0	Mulholland's Gully	..	Naseby ..	..	Duck Yee, Sue Mong.
359. 26/1/00	2 0 0	Section 58 ..	IX.	Maerewhenua	..	W. S. Yeoman and J. Oberg.
365. 20/2/00	18 0 0	Mulholland's Gully	..	Naseby ..	..	Joe Fong.
368. 28/2/00	3 0 0	East Cambrian Township	..	St. Bathan's	..	D. Jones, Griffith Jones, and Catherine Jones.
375. 6/3/00	40 0 0	Section 38 ..	III.	Maniototo	..	Launcelot Hore.
393. 20/3/00	2 0 0	Maori Gully, Puketoi Run	..	..	..	Patrick McCluskey, George F. McCluskey.
394. 20/3/00	15 0 0	Main Spur, west of Sowburn	..	..	..	Robert T. Stewart.
408. 30/3/00	2 0 0	West side of Golden Gully	..	Livingstone	..	John Christian.
438. 24/4/00	6 0 0	West side of Sowburn Township	..	Patearoa ..	..	Robert T. Stewart.
494. 26/7/00	2 0 0	Coalpit Hill	..	Cambrian	..	J. McGuckin and R. McGuckin.
84029. 10/11/97	2 0 0	Near Pound..	..	Naseby ..	..	William Cain, James Cain.
1675. 13/1/72	2 0 0	North side of Lagoon	..	St. Bathan's	..	Anthony Gallagher.
501. 9/7/00	15 0 0	Fiddler's Flat	..	Kyeburn ..	..	Simon Hewitt.
521. 13/8/00	20 0 0	Coalpit Gully	..	Naseby ..	..	W. Beck, Jos. Hewitt, J. Beck.
522. 13/8/00	6 0 0	East side Taieri, opposite junction Bullock Ck.	..	..	..	Frank Parker.
532. 27/8/00	6 0 0	Enterprise Gully	..	Naseby ..	..	Matthew Young.
570. 28/9/00	3 0 0	Duffy Gully..	..	Maerewhenua	..	Amy Frater.
84514. 5/1/92	2 0 0	Milkman's Gully	..	Naseby ..	..	G. W. Mason, H. Mason, S. B. Gibson, H. Donnelly, C. F. Greenslade, W. Pearson.
7242. 24/1/88	2 0 0	Ditto ..	..	" ..	..	Ditto.
618. 29/10/00	2 0 0	Section 9 ..	X.	Maerewhenua	..	Jos. Frater and Morris Frater.
620. 4/12/00	2 0 0	Spec Gully ..	..	Naseby ..	..	Robt. Mountain, Wm. Maralin.
648. 19/12/00	11 2 20	Section 61 ..	I.	" ..	..	Julia Guffie.
653. 21/12/00	2 0 0	Part Sec. 18..	X.	Maerewhenua	..	Thomas Cooper.
658. 21/12/00	2 0 0	" ..	"	Ditto ..	..	William R. Barnes.
659. 21/12/00	3 0 0	Section 57 ..	IX.	" ..	..	W. S. Yeoman and J. Oberg.
666. 21/1/01	6 0 0	German Gully	..	Kyeburn ..	..	P. Beer, A. M. Beer, L. W. Beer.
706. 11/3/01	6 0 0	Section 10 ..	II.	Naseby ..	..	Chong Hoy.

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MINING PRIVILEGES—*continued.*

Number and Date of License.	Area.	Locality.	Block.	Survey District.	Name of Claim.	Name of Registered Owner.
		OTAGO AND SOUTHLAND GOLDFIELDS—*continued.*				
		NASEBY—*continued.*				
	A. R. P.	*Alluvial Claims*—continued.				
86486. 12/7/98	3 0 0	Tucker Gully	..	Kyeburn ..	..	A. M. Beer.
738. 15/4/01	8 0 0	Wet Gully ..	..	Naseby ..	..	Henry Moore.
44758. 10/2/98	4 0 0	Welshman's Gully	..	Manuherikia	..	P. Dillon, S. Dillon, J. Lynch.
790. 31/5/01	15 0 0	Ditto ..	..	"	..	Jas. Hesson, Jas. Simmonds. P. Jacobs, S. Simmonds S. Foxwell S. Dillon.
791. 31/5/01	6 0 0	Surface Hill	..	St. Bathan's	..	P. Garty and A. Gallagher.
838. 23/9/01	4 0 0	Spec Gully ..	..	Naseby ..	..	Frederick W. Inder.
864. 27/9/01	5 0 0	Secs. 10, 13 ..	X.	Maere-whenua	..	G. Adams, jun., D. L. Weir, Charles Adams.
874. 27/9/01	3 0 0	" 10, 16 ..	"	Ditto ..	..	John Matheson.
879. 14/10/01	5 0 0	East side Kyeburn Flat	..	..	..	Jas. Cain and Jas. Merchant.
881. 14/10/01	5 0 0	Milkman's Gully	..	Naseby ..	..	Frederick J. Hore.
883. 14/10/01	7 0 0	Main Gully ..	..	" ..	..	William Guffie.
885. 17/10/01	5 0 0	Patearoa ..	..	..	..	Robert T. Stewart.
886. 17/10/01	4 0 0	Taieri River, above bridge at Patearoa Station	..	..	..	Joseph Hambly, John Hambly.
894. 28/10/01	4 0 0	Between Naseby-Ranfurly Road and Lennane's Hill	..	..	..	Henry Moore.
901. 15/11/01	2 0 0	West side Main Gully, near Target	..	Naseby ..	..	Elizabeth E. Baxter.
902. 15/11/01	5 0 0	Main Gully, near Lolly-woman's Gully	..	" ..	..	Leopold Botting.
914. 29/11/01	2 0 0	Part Sec. 58	I.	St. Bathan's	..	Catherine Dungey.
918. 29/11/01	10 0 0	Section 2 ..	II.	"	..	Scandinavian W.R. Co. (Ltd.).
919. 29/11/01	16 2 17	" 7 ..	VII.	"	..	"
937. 16/12/01	10 0 0	Enterprise and Coalpit Gullies	..	Naseby ..	..	F. W. Inder and Colin Brown.
938. 16/12/01	6 0 0	Taradale Gully	..	" ..	..	Enterprise Gully Water-race Company (Registered).
940. 16/12/01	8 0 0	Forgie's Gully	..	Upper Kyeburn	..	John H. Stewart.
945. 16/12/01	6 0 0	Smoker's Gully	..	..	..	Albert Ravenwood and G. Buchanan.
956. 20/12/01	4 0 0	North side of Golden Gully	..	Livingstone	..	John Christian.
958. 20/12/01	2 0 0	West of Sec. 10	X.	Maere-whenua	..	James Guthrie, Wm. McGrath, and M. McGrath.
959. 20/12/01	4 0 0	Golden Gully	..	Livingstone	..	Benjamin Yeoman.
960. 20/12/01	5 0 0	18 chains east Golden Hill Dam	..	"	..	Thomas Frank Christian.
961. 20/12/01	5 0 0	200 yards east of Robertson's Woolshed	..	" "	..	James Meikle.
964. 25/2/01	2 0 0	Section 58 ..	IX.	Maere-whenua	..	William McQuade.
965. 20/12/01	2 0 0	Golden Gully	..	Livingstone	..	Frank Smith.
966. 10/1/02	1 2 0	Section 58 ..	IX.	Maere-whenua	..	W. S. Yeoman.
967. 20/12/01	2 0 0	" 10 ..	X.	Ditto ..	..	J. Brayshaw and Richard Light.
969. 20/12/01	5 0 0	400 yards east of Robertson's Woolshed	..	Livingstone	..	George Meikle.
978. 16/1/02	5 0 0	Section 19 ..	IV.	Upper Taieri	..	John Lusher.
992. 27/1/02	5 0 0	School Flat..	..	Kyeburn Diggings	..	Moses Brown and John Brown.
996. 27/1/02	2 0 0	Wet Gully ..	..	Naseby ..	..	Lee Ying.
1001. 27/1/02	2 0 0	Near Target	..	" ..	..	P. D. Botting.
1012. 24/2/02	5 0 0	West side of Main Gully	..	" ..	..	Enterprise Water-race Co. (Registered).
1013. 24/2/02	4 0 0	Enterprise Gully	..	" ..	..	Launcelot Hore and J. Hore, jun.
1017. 24/2/02	2 0 0	Main Gully ..	..	" ..	..	Naseby D. and H.S. Co. (Ltd.).
1021. 10/3/02	2 0 0	East side Mulholland's Gully	..	..	..	Lee Ying and Ah How.
†9692. 18/6/97	2 0 0	Section 9 ..	X.	Maere-whenua	..	James Brayshaw.
1047. 25/3/02	14 0 0	Junction of Deep Creek and Little Kyeburn	..	..	..	Isaac Parfitt, jun.

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MINING PRIVILEGES—*continued.*

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	A. R. P.					
OTAGO AND SOUTHLAND GOLDFIELDS—*continued.*						
NASEBY—*continued.*						
Alluvial Claims—continued.						
1054. 14/3/02	3 0 0	Section 64 ..	IX.	Maerewhenua	..	Richard Clark Cook.
1056. 14/3/02	2 0 0	West side of Golden Gully	..	Livingstone	..	Norman Lory.
1064. 7/4/02	41 1 34	Secs. 21, 89 ..	I., III.	Maniototo	..	Naseby D. and H.S. Co. (Ltd.).
1065. 7/4/02	15 2 22	„ 19, 70 ..	VIII., I.	Town of Naseby	..	Thomas C. Hore.
1083. 25/4/02	62 1 11	Section 82 ..	I.	St. Bathan's	..	Vinegar Hill H.S. Co. (Ltd.).
1130. 16/6/02	2 0 0	Fennessy's Paddock, Kyeburn Rd.	..	..	..	Gum Yong and Ah Toey.
1145. 20/6/02	3 0 0	Whitton's Small grazing Run	..	Maerewhenua	..	Francis W. Botting.
1146. 20/6/02	2 0 0	Section 121 ..	IX.	Ditto ..	..	„
1150. 20/6/02	7 2 0	„ 9 ..	X.	„ ..	..	Edward Kean.
1151. 20/6/02	3 0 0	Secs. 51, 121	IX.	„ ..	..	Jonas Oberg.
1152. 20/6/02	3 0 0	Section 51 ..	„	„ ..	..	Peter Alfred Botting.
1153. 20/6/02	2 0 0	Secs. 10, 11 ..	X.	„ ..	..	John O'Donnell.
1160. 20/6/02	5 0 0	Golden Gully Spur	..	Livingstone	..	Dennis O'Grady.
1164. 20/6/02	15 0 0	West side of Golden Gully	..	„	..	H. Lory, N. Lory, and W. S. Yeoman.
10634. 10/11/96	2 0 0	1½ mile from Road east side Rough Ridge	..	..	..	Louis Day.
1189. 13/3/02	12 0 0	Back of Hyde Township	..	..	..	Robert Arthur Mathewson.
1204. 8/9/02	2 0 0	Nardoo Spur	..	Lower Kyeburn	..	B. Smith and W. Smith (executors late W. Smith).
1216. 6/10/02	10 0 0	N.W. Shepherd's Hut	..	Hamilton ..	..	Guy F. Hooper and Hy. Home.
1217. 6/10/02	5 1 0	Main Gully, opposite Inder's Slaughter-yard	..	Naseby ..	..	J. W. Reed, N. S. Reed, and M. Reed.
1218. 6/10/02	15 0 0	Main Gully, above Govt. Water-race	..	„ ..	..	William Guffie.
1219. 6/10/02	8 0 0	Partly Main Gully and partly Mulholland's Gully	..	„ ..	..	Francis A. E. Reed.
1223. 15/10/02	12 0 0	Matheson's Run	..	Highlay ..	..	Samuel Simmonds.
1234. 20/10/02	2 0 0	Below Govt. Water-race, joining John Hore's Claim	..	..	..	Goon Ching.
1241. 13/10/02	8 0 0	Sec. 58 ..	IX.	Maerewhenua	..	Francis W. Botting.
1243. 13/10/02	10 0 0	„ 9 ..	X.	Ditto ..	..	James Brayshaw.
1245. 13/10/02	5 0 0	„ 64 ..	IX.	„ ..	..	John James Cook.
1246. 13/10/02	28 2 32	„ 128 ..	„	„ ..	..	John Christian.
1259. 13/10/02	5 0 0	Part Secs. 10, 14, 16	X.	„ ..	..	Amy Frater.
1268. 31/10/02	5 0 0	Cambrian ..	..	..	..	Wm. Gay and Jas. Fordham.
1291. 2/12/02	2 0 0	East side Main Gully, at foot of Hore's Track	..	Naseby ..	..	Peter Pomory, D. Botting.
1297. 12/12/02	3 0 0	Sec. 19 ..	IV.	Upper Taieri	..	Owen Cambridge.
1298. 12/12/02	16 0 0	Eastern bank, Sowburn Ck.	..	..	..	R. T. Stewart (trustee for Pateroa Sluicing Co.).
31381. 12/10/97	3 0 0	Spec Gully, near H. Donnelly's residence	..	..	..	F. W. Inder.
1311. 19/12/02	3 0 0	Sec. 9 ..	X.	Maerewhenua	..	John Rodgers.
1313. 19/12/02	2 0 0	„ 109 ..	IX.	Ditto ..	..	John Christian.
Dredging Claims.						
1063. 7/4/02	69 1 11	Sec. 2 ..	IV.	Kyeburn ..	..	William Bertram.
1283. 17/11/02	61 2 21	Secs. 26, 18	V., VI.	„ ..	..	Roberts's Naumai G.D. Co.
Quartz Claims.						
193. 7/7/98	16 3 19	Sec. 10 ..	VIII.	Dunback ..	..	H. Spears, G. Ross, and H. Ross.
194. 20/10/98	27 0 0	„ 9 ..	IX.	Highlay ..	..	George Donaldson.
149. 20/7/99	17 0 0	„ 8 ..	„	Dunback ..	..	Latham O. Beal.

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MINING PRIVILEGES—*continued.*

Number and Date of License.	Area.	Locality.	Block.	Survey District.	Name of Claim.	Name of Registered Owner.
	A. R. P.					
OTAGO AND SOUTHLAND GOLDFIELDS—*continued.*						
NASSBY—*continued.*						
Quartz Claims—continued.						
150. 20/7/99	19 0 0	Sec. 5 ..	IV.	Budle ..	..	Latham O. Bell.
259. 23/11/99	10 3 17·4	" 5 ..	IX.	Dunback ..	..	J. Cunningham C. E. Griffin, J. O'Donnell, M. Callery, C. Cunningham, H. A. Griffiths.
405. 14/3/00	20 0 0	" 5 ..	VIII.	" ..	..	
406. 14/3/00	20 0 0	" 4 ..	IX.	Highlay ..	..	William Donaldson.
476. 26/6/00	20 0 0	" 10 ..	V.	" ..	..	Robert Cockerell.
477. 26/6/00	20 0 0	Highlay Dist.	..	..	..	Robert James Cockerell.
665. 16/1/01	20 0 0	Mareburn Ck.	..	Mt. Highlay	..	Charles E. Cockerell.
683. 13/2/01	20 0 0	Part Sec. 10	VIII.	Dunback ..	..	Henry Spear.
1190. 14/5/02	19 1 21	Mareburn ..	..	Highlay ..	..	Robert Cockerell.
		Lot 2 ..	VIII.	" ..	..	Charles McGill.
PEMBROKE.						
Dredging Claim.						
20. 7/6/02	2 0 0	Branch Creek	..	Cardrona ..	..	Dan Goodman.
QUEENSTOWN.						
Alluvial Claims.						
26. 29/5/99	5 0 0	Sec. 1 ..	X.	Skipper's Ck.	..	James Edward Davis.
37. 29/5/99	12 1 17	Secs. 19, 53, and 120	XI.	"	..	August Sorenson and John Henderson.
38. 1/5/99	7 2 31	Secs. 21, 23, 30	"	"	..	Elizabeth Stevenson.
44. 31/7/99	5 0 0	Maori Gully	..	Few's Creek	..	Robert Parkin Lee.
58. 4/9/99	5 0 0	Shotover River	..	..	..	John Smith.
65. 2/10/99	2 0 0	Strahle's Flat	..	Skipper's	..	Adolph Helms, Thomas Hardy.
70. 16/10/99	5 0 0	Shotover River	..	..	..	Edward McLeod.
74. 16/10/99	20 0 0	Sandhills ..	..	Upper Shotover	..	A. Campbell, D. Aspinall, S. White, W. Anderson, P. Connolly, J. Hamilton.
118. 12/2/00	10 0 0	Monk's Terrace	..	Sandhills ..	..	Robert Lee, Geo. Reid, J. Stenhouse, Simon W. Wilson.
128. 5/3/00	4 0 0	Deep Creek ..	..	Upper Shotover	..	Gilchrist McNay.
144. 2/4/00	22 1 0	Sec. 5 ..	VIII.	Humboldt	..	S. Farrant and J. McDowall.
152. 2/4/00	20 0 0	Muddy Creek Terrace	..	..	..	James Commins, James Costello, Michael Dwan.
157. 2/4/00	10 0 0	Bill Guy's Terrace	..	..	..	Wm. Lovell Davis and Jas. Edward Davis.
164. 7/5/00	5 0 0	Skipper's Ck.	..	..	..	Ah Quay.
187. 7/5/00	4 0 0	Precipice Ck.	..	Glenorchy	..	Ernest Every Valpy.
205. 4/6/00	31 0 0	Sec. 112 ..	XIX.	Shotover ..	..	James Tyrrell, jun.
210. 4/6/00	5 0 0	Racecourse Terrace	..	Arthur's Pt.	..	Annie Greig.
216. 2/7/00	9 1 10	Sec. 135 ..	XI.	Skipper's Ck.	..	Benjamin Rogers and Alexander Johnston.
221. 2/7/00	19 0 0	Bucklerburn Creek	..	..	..	James Andrew Wilson.
222. 2/7/00	19 0 0	Ditto ..	..	..	..	Thomas Wilson.
227. 6/8/00	10 0 0	Cattle Flat ..	..	Dart River	..	William Alexander Grant.
247. 3/9/00	62 0 24	Section 126 ..	XI.	Skipper's Ck.	..	Skipper's Sluicing Co.
259. 1/10/00	14 0 0	Shotover R.	..	..	..	Daniel Ward.
268. 5/11/00	6 2 32	Secs. 32 & 41	XI.	Shotover ..	..	John Stephen Collins.
269. 5/11/00	9 3 12	Section 46 ..	"	" ..	..	"
286. 4/2/01	12 0 0	Twelve-mile	..	Lake Wakatipu	..	George and James Reid and David Macdonald.
299. 4/3/01	17 0 20	Section 108 ..	XIX.	Shotover ..	..	Lawrence and Wm. Jas. Lynch.
302. 4/3/01	2 0 0	Boomerang Terrace	..	Maori Point	..	Wong Gong.
303. 22/2/01	4 2 22	Section 18 ..	XI.	Shotover ..	..	Egbert Sainsbury.
337. 6/5/01	54 2 21	Section 20 ..	XIII.	Glenorchy and Mid. Wakatipu	..	Moonlight Sluicing Co.
		" 20 ..	VII.			
350. 8/7/01	4 0 0	Boomerang Terrace	..	Upper Shotover	..	John R. Tripp.
410. 4/11/01	2 0 0	Colville's Ter.	..	Maori Point	..	"
417. 4/11/01	3 0 0	Shotover R.	..	..	..	Alfred and Alfred E. Smith.
423. 2/12/01	2 0 0	Big Beach ..	..	Arthur's Pt.	..	James Tyrrell, jun.
427. 2/12/01	19 0 0	Part of Sec. 1	IX.	Earnslaw ..	..	Charles William Constable.
448. 3/2/02	5 0 0	Frenchman's Beach	..	Shotover ..	..	Mary Reisler.
480. 2/6/02	73 1 31	Section 6 ..	IV.	Skipper's Ck.	..	James Samson.
491. 7/7/02	5 0 0	Shotover R.	..	..	..	Edward McLeod.
499. 7/7/02	14 0 0	Sheepyard Ter.	..	Moonlight	..	Lorenzo Resta.
504. 4/8/02	14 0 0	Section 134 ..	XI.	Skipper's Ck.	..	Alfred Smith and Sons.
534. 1/9/02	12 0 0	Section 20 ..	VII.	"	..	Elizabeth M. Peat and Adolph Helms.
		" 138 ..	XI.			
540. 6/10/02	20 0 0	Near Skipper's	..	..	..	W. L. Davis and J. Henderson.
541. 6/10/02	2 0 0	Big Beach ..	..	Arthur's Pt.	..	James Tyrrell, jun.
542. 6/10/02	2 0 0	Table Terrace	..	Sandhills ..	..	William Anderson.

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MINING PRIVILEGES—*continued.*

Number and Date of License.	Area.	Locality.	Block.	Survey District.	Name of Claim.	Name of Registered Owner.
	A. R. P.					
OTAGO AND SOUTHLAND GOLDFIELDS—*continued.*						
QUEENSTOWN—*continued.*						
		***Alluvial Claims*—continued.**				
561. 8/12/02	14 0 0	Kawarau R.	..	..	..	John Henry Shore.
3. 22/2/99	12 2 30	Section 22 ..	..	Glenorchy	..	Hon. T. Fergus, Jas. Haslett, A. Thomson, J. B. Callan, P. McCarthy, T. Brown.
4. 24/4/99	73 2 0	" 21 ..	..	"	..	Ditto.
33. 1/8/99	52 1 30	Secs. 26, 109, 110, 116, 119, 130, pt. 103	XI.	Skipper's Creek	..	Robert Johnson.
34. 1/8/99	47 2 18	Secs. 89, 90, 104, and 113	"	Ditto ..	..	William Lovell Davis and James E. Davis.
		Dredging Claims.				
61. 16/10/99	66 1 0	Section 137 ..	III.	Shotover ..	..	Horseshoe Bend G.D. Co.
103. 1/12/99	3 0 0	Deadman's Ck.	..	Shotover R.	..	William Tracy Palmer.
207. 4/6/00	30 2 37	Section 110A	XIX.	Shotover ..	..	Prince Arthur Gold-dredging Co.
313. 1/4/01	43 2 20	Secs. 42, 45, 47	"	" ..	..	Maori Point Gold-dredging Co.
315. 1/4/01	44 0 14	Secs. 114, 115	"	" ..	..	Prince Arthur Gold-dredging Co.
479. 2/6/02	100 0 0	Section 2 ..	VIII.	Humbolt ..	..	George Reid.
500. 4/8/02	36 3 30	Secs. 141A, 142	XI.	Skipper's Ck.	..	Peter Reid.
552. 3/11/02	5 0 0	Maori Point	..	..	..	Maori Point Gold-dredging Co.
		Quartz Claims.				
27. 1/8/99	93 3 12	Secs. 14, 18, and 26	II.	Skipper's Creek	..	Achilles Gold-mines (Limited).
		Secs. 2, 3, 19, 20, 21, & 24	III.			
28. 1/8/99	75 0 0	Section 32 ..	II.	Ditto ..	..	"
		" 30 ..	III.			
29. 1/5/99	6 0 0	" 1 ..	"	" ..	..	"
30. 1/5/99	2 1 30	" 4 ..	"	" ..	..	"
31. 1/5/99	2 0 0	" 10 ..	"	" ..	..	"
32. 1/5/99	24 0 0	Secs. 12, 19, 21	II.	" ..	..	"
40. 1/9/99	46 1 4	Secs. 6, 7, & 8	XI.	" ..	..	Shotover Q.M. Co. (N.L.).
256. 8/9/00	2 0 0	Jenning's Gully	..	Skipper's ..	..	William George McPherson and Martin Tobin.
457. 7/4/02	20 0 0	Ditto ..	..	" ..	..	John McMahon.
484. 26/6/02	20 0 0	" ..	..	" ..	..	Edward Woolhouse.
540. 6/10/02	20 0 0	Near Skipper's	..	" ..	..	W. L. Davis and J Henderson.
ARROWTOWN.						
		Alluvial Claims.				
177. 27/11/00	3 0 0	Bush Creek ..	..	Arrow River	..	Peter Rattigan.
181. 11/12/00	26 0 10	Section 27 ..	I.	Cardrona ..	..	Daniel O'Leary.
195. 31/1/01	2 0 0	Hood's Gully	..	Macetown	..	Charles Ross.
198. 31/1/01	2 0 0	German Hill	..	Arrow River	..	James Hamilton.
251. 28/6/01	5 0 0	Whitechapel Flat	..	"	..	Robert Porter.
294. 24/9/01	4 0 0	Criffel Face	..	Cardrona ..	..	Albert Zala.
335. 17/12/01	2 0 0	Coal Creek ..	..	Kawarau R.	..	Hugh Robertson.
340. 17/12/01	11 2 0	Arrow Falls	..	Arrow River	..	Arrow Falls G.M. Co. (Ltd.).
379. 25/3/02	13 0 0	Criffel Face ..	..	Cardrona ..	..	Wm. Anderson, sen., and Neil McLellan.
385. 7/4/02	4 0 0	Head of Coal Creek	..	Kawarau ..	..	Hugh Robertson.
408. 29/7/02	19 1 8	Section 39 ..	XVIII.	Shotover	..	Eugene C. D. Hay and George McH. Hay.
		" 24 ..	X.			
422. 26/8/02	2 0 0	Mason's Gully	..	Arrow River	..	Albert Lister and Scobie McKay.
433. 23/9/02	2 0 0	Deep Creek ..	..	Gibbston ..	..	J. Bowler and A. A. Schieb.
475. 22/12/02	27 2 5	Secs. 17 & 18	VII.	Cardrona ..	..	Walter Little.
7. 11/4/99	4 0 0	Bracken's Gully	..	Arrow River	..	Richard Cotter and Florence Dunn.
21. 30/5/99	2 0 0	East side of Arrow River	..	..	..	Charles and Henry Steele.
113. 3/4/00	4 0 0	East side of Cardrona Ck.	..	..	..	A. Torrie, P. Galvin, A. Torrie, jun., and J. Torrie.
114. 3/4/00	4 0 0	Twohy's Creek	..	Cardrona ..	..	Wm. Robson and Daniel Miller.
116. 3/4/00	5 0 0	Bush Creek	..	Arrow River	..	Patrick Barron.
134. 5/6/00	3 0 0	Red Hill ..	..	Macetown	..	W. Reid, T. Reid, and C. Patton.
		Dredging Claims.				
69. 3/10/99	25 2 30	Section 23 ..	II.	Kawarau ..	..	Kawarau Consolidated G.D. Co.
90. 6/3/00	30 1 31	" 17 ..	XIV.	Shotover ..	..	Wm. H. Anderson, Jas. Anderson, and William Hannah.
92. 6/3/00	58 1 3	Section 18 and part Sec. 3	I.	Cardrona	..	Lafranchi Freehold Gold-dredging Co. (Limited).
109. 3/4/00	100 0 0	Section 11 ..	II.	Cardrona ..	..	Lone Star Dredging Co.
		" 11 ..	VII.			
111. 3/3/00	8 0 0	Twohy's Gully	..	" ..	..	Anna Maria Lafranchi.
129. 5/6/00	26 3 12	Section 24 ..	II.	Kawarau ..	..	Bonanza Gold-dredging Co.
44. 3/10/99	16 0 0	" 29 ..	I.	" ..	..	Walora Gold-dredging Co.
45. 7/11/99	27 2 20	" 28 ..	"	" ..	..	Eclipse Gold-dredging Co.

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MINING PRIVILEGES—*continued*

Number and Date of License.	Area.	Locality.	Block.	Survey District.	Name of Claim.	Name of Registered Owner.
	A. R. P.					
OTAGO AND SOUTHLAND GOLDFIELDS—*continued.*						
ARROWTOWN—*continued.*						
Alluvial Claims—continued.						
55. 15/11/99	39 2 10	Section 33 ..	V.	Kawarau ..	..	Gibbston Gold-dredging Co.
68. 3/10/99	19 0 20	Secs. 21 & 22	II.	" ..	..	"
		Section 25 ..	III.			
		" 35 ..	V.			
67. 3/10/99	18 2 34	Section 31 ..	I.	"	..	Kawarau Bridge G.D. Co.
150. 5/6/00	21 1 0	" 20 ..	"	Cardrona ..	..	Charles Fleming.
151. 30/6/00	4 0 0	Cardrona ..	..	..	..	Lafranchi Freehold G.D. Co.
159. 24/7/00	76 0 0	Section 27 ..	II.	Kawarau ..	..	George Sidney Otway.
161. 28/8/00	20 2 15	" 18 ..	XIV.	Shotover ..	..	James Partridge.
		" 8 ..	III.	Soho ..		
237. 18/6/01	30 3 0	" 14 ..	II.	Kawarau ..	..	Neville Sievwright.
Quartz Claims.						
6. 17/3/99	4 0 0	August's Bush	..	Arrow River	..	Patrick Barron.
25. 1/8/99	52 3 21	Secs. 11, 12, 23, 29, 49, 52	XII.	Skipper's Creek	..	Glenrock Consolidated.
26. 30/5/99	29 3 12	Section 54 ..	"	Ditto ..	..	"
27. 30/5/99	16 0 0	" 37 ..	"	" ..	..	"
28. 30/5/99	10 0 0	" 53 ..	"	" ..	..	"
29. 1/8/99	75 2 30	" 56 ..	"	" ..	..	William John Farrell
30. 1/8/99	80 3 35	Secs. 51 & 55	"	" ..	..	"
455. 28/10/02	5 0 0	Caledonian Gully	..	Macetown	..	Richard Balch.
CROMWELL.						
Alluvial Claims.						
966. 6/3/02	19 0 0	Back of Gee's Flat on south side of Kawarau River	..	..	..	John Robertson.
976. 5/6/02	2 0 0	Left-hand branch of Gravelly Gully, Wanaka Road	..	..	..	George Gordon Woodhouse.
1064. 7/8/02	2 0 0	Doctor's Flat	..	Bannockbn.	..	Thomas Rooney.
1118. 9/10/02	5 0 0	Gee's Flat ..	..	Kawarau Gorge	..	Thomas Craig.
1133. 6/11/02	7 2 12	Section 74 ..	I.	Cromwell ..	..	John Wrightson, jun.
1162. 11/12/02	12 0 0	Terrace behind Gee's Flat	..	Kawarau ..	..	James A. Gordon and Mary A. Rowe.
1163. 11/12/02	13 0 0	Gee's Flat ..	..	Kawarau Gorge	..	Wm. J. Williams and J. McK. Nicol.
1165. 11/12/02	12 0 0	Near Luggate, between right and left branches of Luggate Creek	..	..	..	W. W. White, R. White, and J. Sheath.
1167. 12/12/02	6 0 0	Poverty Gully, part of Sec. 19	I.	Bannockbn.	..	William Lynn.
1168. 12/12/02	6 0 0	Smith's Gully, part of Sec. 19	"	"	..	John Lynn.
800. 11/10/01	18 0 0	Nevis ..	..	Nevis ..	..	Edwin McDonald.
830. 7/11/01	5 0 0	Kawarau Gorge	..	..	..	R. Ritchie and W. H. Thomas.
880. 7/2/02	5 0 0	Whitton's Ck.	..	Upper Nevis	..	William O'Connell.
901. 6/3/02	6 0 0	South side of Kawarau R., back of Gee's Flat	..	..	..	James Bethune.
916. 10/4/02	12 0 0	Back of Gee's Flat	..	Kawarau Gorge	..	William Foreman.
918. 10/4/02	3 0 0	Terrace back of Gee's Flat	..	..	..	Jas. A. Gordon and M. A. Rowe.
920. 10/4/02	6 0 0	Between Bannockburn Creek and Old Woman's Gully	..	..	..	William Horn.
963. 8/5/02	2 0 0	Carrick Range, middle spur, Duffer's Gully	..	..	..	Thomas Smith.
602. 13/12/00	7 0 0	Pipeclay Ter.	..	Bannockbn.	..	James Hancock, jun.
615. 7/2/01	57 1 26	Section 26 ..	XIV.	Cardrona ..	..	P. Harrington and J. Cavanagh.
616. 7/2/01	100 0 0	" 10 ..	VI.	Lorn ..	..	Jessie M. Ellis.
627. 7/2/01	5 0 0	Paddy's Gully	..	Upper Nevis	..	Robert R. Macdonald.
670. 11/4/01	3 0 0	South side of Cameron's Gully	..	Nevis ..	..	Charles Williamson.
691. 9/5/01	35 2 4	Section 8 ..	VII.	Lorn ..	..	Jeremiah O'Connell.

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MINING PRIVILEGES—*continued.*

Number and Date of License.	Area.	Locality.	Block.	Survey District.	Name of Claim.	Name of Registered Owner.
		OTAGO AND SOUTHLAND GOLDFIELDS—*continued.*				
		CROMWELL—*continued.*				
	A. R. P.	*Alluvial Claims*—continued.				
736. 4/7/01	3 0 0	North bank of Kawarau R.	..	Kawarau Gorge	..	Jeremiah McElligott.
738. 4/7/01	4 0 0	Cornish Point, opposite Cromwell	..	..	..	Nicholas Thomas.
2. 13/1/98	117 2 9	Section 26 ..	III.	Wakefield	..	Cromwell Proprietary G.M. Co.
339. 24/4/00	50 0 0	" 2 ..	IX.	Lorn ..	..	Joe Park.
358. 20/4/00	2 0 0	Pipeclay Ter.	..	Bannockbn.	..	David A. Jolly.
367. 20/4/00	4 0 0	Luggate Crk., below Slip Spur	..	..	..	Patrick Towey and James Bruce.
370. 16/11/99	8 1 4	Section 61 ..	I.	Cromwell..	..	Charles Holden.
445. 9/6/00	2 0 0	Kawarau Grg., north side of Cromwell	..	..	..	Thomas Wilson and Marion Jenkins.
498. 9/8/00	2 0 0	No. 1 Branch, Gravelly Gully	..	..	..	Ting Fonk Tong and Suun Shang.
500. 9/8/00	3 0 0	Flat near Kawarau Gorge	..	..	..	Nicholas Thomas.
523. 7/9/00	2 0 0	Terrace at Quartzville	..	Bannockbn.	..	Thomas Hunter.
535. 5/10/01	9 2 0	Section 18 ..	II.	Cromwell..	..	The Electric G.D. Co. (Ltd.).
548. 5/10/00	5 0 0	Nevis Gorge, above Deep Creek	..	..	..	Robert Girdwood.
90. 2/2/99	2 0 0	No. 1 Branch, Gravelly Gully, near Queensberry	..	..	..	Ting Fonk Tong and Suun Shang.
116. 8/6/99	6 0 0	South side of Quartz Reef Creek	..	..	..	James Partridge.
129. 6/7/99	3 0 0	North side of Kawarau River, above Cromwell	..	..	..	Tommy Ah Joe.
132. 6/7/99	4 0 0	North side of Poverty Gully	..	Bannockbn.	..	James Crabbe.
134. 6/7/99	9 0 0	Garvey's Hill	..	Upper Nevis	..	John C. Bayles.
147. 3/8/99	94 3 32	Section 1 ..	VII.	Kingston ..	..	John K. Jameson.
183. 14/9/99	16 0 0	Poverty Gully and Deep Lead Ter.	..	Bannockbn.	..	James Crabbe.
184. 14/9/99	8 0 0	North bank of Kawarau River, above Cromwell	..	..	..	Wong Shen, Lock Lim, and others.
205. 19/10/99	19 0 0	Galvin's Gully	..	Nevis ..	..	John Mill.
208. 19/10/99	5 0 0	North side of Duffer's Gully	..	Bannockbn.	..	Lee Kim and Jack Lee.
210. 19/10/99	3 0 0	Near Drummond's Crk.	..	Nevis ..	..	Joe Park.
218. 19/10/99	5 0 0	Flat, both sides of Cameron's Gully	..	" ..	..	E. McMillan.
219. 19/10/99	3 0 0	Terrace at mouth of Cameron's Gully	..	" ..	..	"
223. 19/10/99	12 0 0	South side of Frenchman's Gully	..	Luggate ..	..	Johnson, Lawson, Edie, and Wilde.
238. 19/10/99	3 0 0	Near Drummond's Crk.	..	Nevis ..	..	Joe Park.
249. 16/11/99	6 0 0	North side of Smith's Gully	..	Bannockbn.	..	Archibald Ritchie.
89853. 10/11/98	2 0 0	Quartz Reef Point	..	..	..	James Bethune and P. Ewart.
89867. 10/11/98	2 0 0	200 yd. above Maori Point, Clutha River	..	..	..	Henry Hotop.
98507. 8/12/98	2 0 0	Quartz Reef Point	..	..	..	John Chapman and James Crombie.
3103. 17/9/96	15 0 0	Section 3 ..	XIII.	Nevis ..	..	W. Masters, Charles Masters, and D. and J. Adie.
6646. 29/5/91	2 0 0	West side of Cotter's Gully	..	Mt. Criffel	..	Craig and Robertson.

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MINING PRIVILEGES—*continued.*

Number and Date of License.	Area.	Locality.	Block.	Survey District.	Name of Claim.	Name of Registered Owner.
		OTAGO AND SOUTHLAND GOLDFIELDS—*continued.*				
		CROMWELL—*continued.*				
		***Alluvial Claims*—continued.**				
	A. R. P.					
50. 2/2/99	2 0 0	Between Adams's and Pigroot Guls.	..	..	..	Henry Murray.
76. 4/5/99	5 0 0	Long Gully ..	..	Bendigo ..	..	Ah Nui.
85584. 9/12/97	2 0 0	North Terrace, Pipeclay Gul.	..	Bannockbn.	..	John Parsons, James and R. Ferguson.
77851. 3/3/98	5 0 0	North bank of Kawarau River, above Cromwell	..	..	..	Ah Thick, Ah Long, Ah Fue, and others.
89702. 9/6/98	2 0 0	Bailey's Gully	..	Bannockbn.	..	James B. Horn and J. H. Horn.
77858. 3/3/98	2 0 0	Campbell's Gully, Qrts. Reef Point	..	..	..	William Clingie and William Ewart.
89762. 8/9/98	6 0 0	On south side of Pipeclay Terrace	..	Bannockbn.	..	W. T. Talboys and party.
89764. 8/9/98	2 0 0	Terrace west of Pipeclay Gully	..	"	..	Adam and Thomas Aitken.
89773. 8/9/98	2 0 0	North side of Quartz Reef Creek	..	..	..	N. Thomas and J. Ellis.
89803. 6/10/98	2 0 0	North bank of Kawarau River	..	..	..	Thomas Bain and F. Jones.
89819. 6/10/98	2 0 0	Quartz Reef Point	..	..	..	Alexander Campbell.
89822. 6/10/98	2 0 0	Birchall's Gully	..	Lowburn ..	..	George H. Scoles and another.
89849. 10/11/98	2 0 0	Quartz Reef Point	..	..	..	Thomas Wood and W. Wood.
76553. 12/3/97	4 0 0	Doctor's Flat	..	Bannockbn.	..	John Short and N. McLellan.
76586. 12/3/97	2 0 0	South of Fourmile Creek, Quartz Reef Point	..	..	..	James Bethune and G. Logan.
85586. 3/2/98	2 0 0	Multum in Parvo Gully, south of Dry Creek	..	Lindis ..	..	John S. Harvey and H. Munro.
79821. 22/4/97	2 0 0	East bank of Clutha River, about 1½ m. above Queensberry Chair	..	..	..	William Wood and B. Burrowes.
89817. 6/10/98	3 0 0	Quartz Reef Point	..	..	..	George Scoles, William Henry Thomas, and W. Mayne.
80745 9/9/97	2 0 0	Duffer's Gully	..	..	..	Chow Tong.
80792. 7/10/97	2 0 0	South side of Quartz Reef Creek	..	..	..	William Tillman and William Wilson.
88182. 9/6/98	2 0 0	Maori Point, Clutha River, below Queensberry Chair	..	..	..	Henry Hotop and George A. Morris.
77811. 3/2/98	2 0 0	About a mile above Devil's Creek, near Bendigo Rd.	..	..	..	Malcolm McLeod and others.
88197. 9/12/97	2 0 0	Upper Nevis Flat	..	..	..	Thomas Steel.
88184. 9/6/98	2 0 0	Quartzville Terrace	..	..	..	John W. Ellis.
62581. 17/1/96	2 0 0	Terrace on south side of Whitton's Creek	..	Nevis ..	..	Samuel and Andrew Graham.
88102. 14/4/98	2 0 0	South side of Township Flat	..	" ..	..	R. J. May and Wm. Churstain.
73116. 15/10/96	2 0 0	Junction of Shepherd's and Bannockburn Creeks	..	..	..	Jas. Begg and J. Donnelly.
85583. 3/2/98	3 0 0	Right branch of Luggate Creek, below Slip Spur	..	..	..	John Vlietstra, Wm. Gannon, Jas. Bruce.
73191. 3/12/96	2 0 0	Mt. Criffel, right branch of Luggate Creek	..	..	..	Elijah C. Hedditch and J. Semmens.

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MINING PRIVILEGES—*continued.*

Number and Date of License.	Area.	Locality.	Block.	Survey District.	Name of Claim.	Name of Registered Owner.
		OTAGO AND SOUTHLAND GOLDFIELDS—*continued.*				
		CROMWELL—*continued.*				
	A. R. P.	*Alluvial Claims*—continued.				
76527. 11/2/97	3 0 0	Menzies' Terrace	..	Bannockbn.	..	Wm. Hitchens.
73210. 12/11/96	2 0 0	South Terrace, Bendigo Ck.	..	..	..	Wm. Bonner and C. Maher.
76551. 12/3/97	2 0 0	Terrace about a mile east from Lindis River	..	..	..	Pat Neilan and Jas. Mann.
59784. 11/10/95	3 0 0	Graham's Gully	..	Nevis ..	..	Charles Taylor, S. Soper, and T. Soper.
64099. 23/5/96	4 0 0	Quartz Reef Point	..	..	..	Wm. Gillman and Jas. Partridge.
67604. 12/6/96	2 0 0	Drummond's Terrace	..	Nevis ..	..	Henry Mason and Robt. McDonald.
61112. 26/10/95	2 0 0	Pipeclay Ter.	..	Bannockbn.	..	Neil McLellan, Jas. Lawrence.
62596. 13/3/96	2 0 0	Poverty Gully	..	"	..	Jas. Begg and John Donnelly.
61176. 22/11/95	2 0 0	Gee's Flat ..	..	Kawarau Gorge	..	Gordon and Rowe.
62507. 18/12/95	2 0 0	South side of Galvin's Gully	..	Nevis ..	..	James Masters and Chas. Williamsen.
62508. 18/12/95	4 0 0	Quartz Reef Point	..	..	..	Ed. Murrell and Hy. Murrell.
53110. 7/9/94	2 0 0	Cromwell side of Limestone Gully	..	..	..	Ernest Sanders and Thomas McNulty.
67683. 17/9/96	4 0 0	West bank of Clutha River, above Cromwell	..	..	..	John Weeks, Geo. Hayes, W. Tilly, and Chin Hough.
57198. 19/7/95	4 0 0	Bannockburn	..	..	..	J. Pryde, T. Aitken, R. Ritchie, and Fredk. Pryde.
57184. 5/7/95	2 0 0	Bendigo, on spur west of Aurora Gully	..	..	..	Fredk. Abelsted and Matthew Todd.
59754. 18/9/95	2 0 0	Raupo Gully	..	..	..	Alexander and Donald Ross.
56745. 8/3/95	3 0 0	About a mile above Nevis Township ..	..	..	..	W. H. Thomas, H. Thomas, and W. Churston.
56747. 8/3/95	2 0 0	Nevis ..	..	..	..	Margt. Murphy, T. Hutchison.
57127. 17/5/95	2 0 0	South side of Pipeclay Gully	..	Bannockbn.	..	Jas. F. Ray and R. M. Ray.
59719. 2/9/95	2 0 0	Upper Bendigo	..	..	..	Charles O'Donnell.
79371. 10/6/97	4 0 0	Adjoining Nevis Township	..	..	..	Churstain, Williamson, and Thomas.
64098. 23/5/96	2 0 0	Smith's Gully	..	Bannockbn.	..	W. Clunnie and Jas. Graham.
50891. 10/8/94	3 0 0	North side of Pipeclay Gully	..	"	..	Adam Aitken and Thos. Aitken.
53114. 7/9/94	4 0 0	West bank of Clutha River, about 3 miles above Luggate Punt	..	..	..	Wong Wee, Ah Loh, Wong Tau, Sey Youk.
59712. 2/9/95	6 0 0	Pipeclay Terrace	..	Bannockbn.	..	D. A. Jolly, W. T. Talboys, A. Aitken, J. Lawrence, J. Lawrence, jun., and C. and A. Lawrence.
59722. 2/9/95	2 0 0	Four-mile Ck.	..	Quartz Reef Point	..	R. Fand, E. T. Kitto.
53120. 7/9/94	2 0 0	Quartz Reef Point	..	..	..	John Hayes and John Chapman.
53143. 5/10/94	2 0 0	Nevis Flat ..	..	..	..	Alex. Robertson and James McKelvie.
53179. 16/11/94	2 0 0	Bailey's Gully	..	Bannockbn.	..	Fredk. Rowley and John Perry.
64096. 12/6/96	3 0 0	East side of Pipeclay Gully	..	"	..	P. Paterson, T. Rooney, and J. Ball.
55139. 14/12/94	2 0 0	Wash Creek..	..	Mt. Pisa ..	..	Alf. Brown and John McDonald.
55168. 18/1/95	3 0 0	South side of Pipeclay Terrace	..	Bannockbn.	..	Archibald McGregor and Edmund Kennedy.
50722. 9/2/94	2 0 0	On bank of Kawarau River	..	..	..	Felix McFelin.
50833. 25/5/94	2 0 0	Head of Blackman's Gully	..	Quartz Reef Point	..	J. Willson and P. Hosking.
50858. 15/6/94	2 0 0	Quartzville Terrace	..	Bannockbn.	..	James Hancock.

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MINING PRIVILEGES—continued.

Number and Date of Licence.	Area.	Locality.	Block.	Survey District.	Name of Claim.	Name of Registered Owner.
	A. R. P.					
OTAGO AND SOUTHLAND GOLDFIELDS—continued.						
Cromwell—continued.						
Alluvial Claims—continued.						
50875. 6/7/'24	2 0 0	Schoolhouse Creek	..	Nevis ..	..	T. P. Norris and Geo. Clough.
67672. 17/7/'26	3 0 0	Bendigo ..	..	..	..	Patrick Nellan, Jas. Mann, and Fredk. Hunter.
57106. 22/4/'25	2 0 0	Terrace north of Smith's Gully	..	Bannockburn.	..	Chas. Koch and Jas. Thompson.
56113. 7/9/'24	3 0 0	Half a mile below Macandrew's Bridge	..	Kawarau River	..	T. McElligott, T. Bain, and A. Horn.
46093. 25/3/'23	3 0 0	Anthony's Gully, south side of Whitton's Creek	..	Nevis ..	..	Samuel and Andrew Graham.
56145. 10/10/'24	2 0 0	North bank Kawarau River, outside Cromwell boundary	..	..	..	Wong Him, Yong Klew, and Look Tee.
45064. 6/10/'23	2 0 0	Between Wash and Lockar Creeks	..	Pisa Run ..	..	Keith Campbell.
45076. 20/10/'23	2 0 0	Terrace east of Luggate Ck.	..	..	..	Carl Hanson, Claude Vlietstra, J. J. Vlietstra, and W. Craven.
45097. 2/10/'23	2 0 0	Nine-mile Ck.	..	..	.	Kong Chew and Tow Sie.
45325. 19/11/'23	3 0 0	Kawarau Gorge	..	..	..	F. K. Edwards, Thos. and Pat. McElligott.
64052. 12/6/'26	2 0 0	South side of Fleming's Gully	..	Nevis ..	..	Thomas Shaw.
67642. 13/8/'26	2 0 0	Junction of Five-mile Creek and Hatter's Gully	..	..	..	Thomas Wood.
4939. 21/4/'23	3 0 0	Potter's Gully	..	Carrick Rng	..	Ah Hou, Jack Lye, & Ly Shun.
44949. 5/5/'23	2 0 0	Fix Gully ..	..	Kawarau Gorge	..	George and John Henderson.
44967. 19/5/'23	5 0 0	South bank of Kawarau River, half a mile above Cromwell	..	..	..	Key Let, Tong Yeu, Ham Wong, Duck Chee, and Ah Hee.
44969. 19/5/'23	2 0 0	Eastern bank of Nevis River	..	..	..	J. Macdonald and C. J. Morris.
4987. 9/6/'23	4 0 0	North bank Kawarau River, below Gentle Annie Bridge	..	..	..	Ah Kew, Ly Kow, Sunn Moy, and Sue Fok.
45013. 7/7/'23	4 0 0	North side of Drummond's Creek	..	Nevis ..	..	Edward McMillan.
44245. 21/1/'23	3 0 0	Quartz Reef Point	..	..	..	Maurice Leahey and party.
44247. 21/1/'23	2 0 0	Bannockburn	..	..	..	W. Robertson and C. Tippett.
44257. 10/2/'23	2 0 0	Cockburn Gully	..	Mt. Criffel	..	Patrick and Michael Towey.
55173. 18/1/'25	4 0 0	Luggate ..	..	..	..	Ah Loh, Wong How, Wong En, and Dam Wee.
56702. 8/2/'25	2 0 0	Poverty Gully	..	Mt. Criffel	..	Patrick Towey.
44263. 10/2/'23	2 0 0	Kawarau Gorge	..	..	..	George and Richard Redhead.
45041. 4/9/'23	2 0 0	Green's Gully	..	Carrick Rng.	..	James Lawrence.
Dredging Claims.						
1121. 9/10/'02	12 0 0	Bannockburn Creek	..	..	..	Cromwell G.D. Co. (Ltd.).
1122. 9/10/'02	19 0 0	Lower Nevis	..	Nevis ..	..	Archibald Ritchie.
1132. 4/11/'02	23 2 14	Sec. 19 ..	V.	Wakefield	..	James L. Scott.
1161. 9/10/'02	21 3 15	" 4 ..	VI.	Kawarau ..	..	Daniel Haynes.
756. 5/9/'01	21 1 38	Secs. 13, 14, 15	IV.	Cromwell ..	..	Voltaic Dredging Co. (Ltd.).
794. 11/10/'01	53 1 0	Sec. 8 ..	VIII.	Tarras ..	..	Patrick Thomas.
795. 11/10/'01	49 0 10	" 21 ..	VII.	" ..	..	David Pinkerton.
		" 22 ..	VIII.			
796. 11/10/'01	49 2 0	" 26 ..	II.	" ..	..	John Francis Kitto.
844. 5/12/'01	100 0 0	" 10 ..	I.	Nevis ..	..	James Horn.
870. 7/2/'02	23 0 28	Secs. 6 & 7 ..	XIV.	Leaning B'k.	..	Isabella Hedley.
872. 7/2/'02	17 2 28	Sec. 18 ..	VI.	Lorn ..	..	James Austin.
		" 9 ..	VII.			
895. 6/3/'02	100 0 0	Secs. 16 & 19A	V.	Wakefield	..	Rise and Shine G.D. Co. (Ltd.).

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MINING PRIVILEGES—*continued.*

Number and Date of License.	Area.	Locality.	Block.	Survey District.	Name of Claim.	Name of Registered Owner.
	A. R. P.					
OTAGO AND SOUTHLAND GOLDFIELDS—*continued.*						
CROMWELL—*continued.*						
		***Dredging Claims*—continued.**				
896. 6/3/02	52 2 32	Sec. 30 ..	VII.	Low'r Hawea	..	Patrick Thomas.
898. 6/3/02	100 0 0	Secs. 17 & 25	V.	Wakefield	..	Rising Sun G.D. Co. (Ltd.).
899. 6/3/02	69 3 29	Sec. 11 .. / Secs. 5 & 10	VI. / VII.	Lorn ..	..	James H. Cheshire.
900. 6/3/02	94 0 0	Sec. 18 ..	III.	Nevis ..	..	New Nevis G.D. Co. (Ltd.).
594. 13/12/00	15 0 25	Secs. 6 & 7 ..	III. & VII.	Lorn ..	..	William Wills and party.
595. 13/12/00	14 2 38	Sec. 5 ..	III.	" ..	..	Remarkables G.D. Co. (Ltd.).
639. 7/3/01	15 0 0	Secs. 17 & 19 / " 10 & 11	II. / IV.	Cromwell..	..	Central Magnetic D. Co. (Ltd.).
667. 11/4/01	19 0 0	Sec. 28 ..	II.	Kawarau ..	..	William D. Jolly.
668. 11/4/01	18 1 28	Secs. 56 & 7	XVIII.	Leaning R'k.	..	Kelly & Casey Beach D. Co. (Ld.).
692. 9/5/01	45 3 20	" 20 & 23 / Sec. 11 .. / " 71 ..	V. / VI. / I.	Wakefield / Cromwell..	..	Point d'Or G.D. Co. (Ltd.).
694. 9/5/01	21 0 0	" 5 ..	VI.	Kawarau ..	..	Gold Chair G.D. Co. (Ltd.).
717. 6/6/01	58 3 0	" 11 .. / " 6 ..	XIV. / XVI.	Tarras ..	..	David A. Jolly.
718. 6/6/01	42 2 27	" 24 ..	V.	Wakefield	..	Rise and Shine G.D. Co. (Ltd.).
723. 6/6/01	33 2 0	" 6 .. / " 16 ..	XI. / VI.	Lwr. Wanaka / Lwr. Hawea	..	Prince Albert G.D. Co. (Ltd.).
727. 6/6/01	90 3 0	" 5 ..	VIII.	Tarras ..	..	James Burrowes.
732. 6/6/01	98 0 0	Secs. 19 & 29	VII.	" ..	..	Golden Chain G.D. Co. (Ltd.).
755. 5/9/01	20 3 30	" 18 & 20	II.	Kawarau ..	..	Meg and Annie G.D. Co. (Ltd.).
289. 16/12/00	74 1 24	Sec. 31 ..	IV.	Lwr. Wanaka	..	Prince Albert G.D. Co. (Ltd.).
346. 20/4/00	40 2 0	" 14 ..	VIII.	Lwr. Hawea	..	E. and J. Knewstubb.
361. 20/4/00	23 1 0	" 19 .. / " 3 ..	II. / VI.	Kawarau ..	..	Gentle Annie G.D. Co. (Ltd.).
362. 20/4/00	22 0 0	" 13 ..	II.	" ..	..	Grand Junction G.D. Co. (Ltd.).
403. 11/5/00	40 1 0	" 37 ..	IV.	Lwr. Wanaka	..	Edward D. Mason.
404. 11/5/00	44 3 0	Section 18 ..	VII.	Tarras ..	..	Edward C. Holmes.
422. 12/5/00	84 1 16	" 28A..		Lwr. Hawea	..	Vulcan G.D. Co. (Limited).
428. 9/6/00	18 2 0	" 15 ..	II.	Cromwell..	..	Electric G.D. Co. (Limited).
512. 6/9/00	34 1 30	" 70 ..	I.	" ..	..	Junction-Electric Gold-dredging Co. (Limited).
537. 5/10/01	63 2 0	" 28 ..	III.	Tarras ..	..	John Vlietstra.
559. 4/10/00	24 1 16	" 63 .. / " 21 .. / " 10 ..	I. / V. / VI.	Cromwell / Wakefield	..	Royal Maori G.D. Co. (Ltd.).
165. 14/9/99	11 0 20	Secs. 49 & 50	I.	Cromwell..	..	Central Electric G.D. Co. (Ltd.).
172. 14/9/99	32 4 0	" 40 & 44	"	"	..	Cromwell G.D. Co. (Limited).
180. 14/9/99	14 2 20	Section 5 ..	IV.	"	..	Second Magnetic Gold-dredging Co. (Limited).
246. 16/11/99	10 0 0	" 8 ..	VI.	Wakefield	..	Alpine No. 2 G.D. Co. (Ltd.).
271. 14/12/99	22 0 20	" 9 .. / " 1 ..	" / XVII.	Wakefield & Leaning R'k	..	New Alpine Consols D. Co. (Ltd.).
274. 17/12/99	26 3 12	Secs. 1 & 4 ..	XVIII.	Leaning R'k	..	New Half-way House Gold-dredging Co. (Limited).
73158. 1/10/96	32 0 0	Section 43 .. / " 6 ..	I. / VI.	Cromwell / Wakefield	..	Hartley and Riley Beach Dredging Co. (Limited).
1. 14/1/99	68 0 16	" 10 ..	XIII.	Nevis ..	..	Ngapara No. 3 Co. (Schaumann and party).
77889. 2/4/98	31 0 0	" 7 ..	VI.	Wakefield	..	Riley's Beach G.D. Co. (Ltd.).
82. 7/7/99	97 1 24	" 2 ..	XIII.	Lindis ..	..	Pioneer Eureka G.D. Co. (Ltd.).
		Quarts Claims.				
964. 8/5/02	19 0 0	Reliance Hill	..	Bendigo ..	..	Leo. Salmond.
1011. 10/7/02	6 0 0	..	..	..	..	J. Pascoe, R. Russell, and others.
1137. 6/11/02	19 0 0	Mt. Pisa Range near Moonlight Creek	..	..	..	James Partridge.
347. 20/4/00	71 3 21	Bendigo, S. 25	III.	Wakefield	..	Cromwell Proprietary Gold-mining Co. (Limited).
348. 20/4/00	32 1 16	" S. 10	II.	"	..	Ditto.
77815. 3/2/98	300 ft. by 300 ft.	Rise and Shine Gully	..	Bendigo ..	..	C. O'Donnell and A. McLoughlin.
67609. 20/6/96	600 ft. in length	Pipeclay Gully	..	Carrick Range	..	Evan Jones, Jas. Horn, W. T. Talboys, Jas. Marshall.
67610. 20/6/96	Ditto ..	"	..	Ditto ..	..	Ditto.
62595. 13/3/96	300 yd. by 300 yd.	Bannockburn	..	..	..	Hugh Robertson, B. Burrows, and D. Mackintosh.
67685. 17/7/96	600 ft. in length	Pipeclay Gully	..	Carrick Range	..	Chas. Cooper and Geo. Guilford.
CLYDE.						
		Alluvial Claims.				
9. 4/3/99	3 0 0	Fraser River	..	..	..	Wm. Hookey and another.
54. 8/5/99	4 0 0	Blackman's Gully	..	..	..	Tong Poy and others.
74. 10/6/99	2 0 0	Bank of Molyneux River	..	..	..	John Sheehy.
102. 8/7/99	3 0 0	Fraser River	..	..	..	Wm. Hookey and another.

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MINING PRIVILEGES—*continued.*

Number and Date of License.	Area.	Locality.	Block.	Survey District.	Name of Claim.	Name of Registered Owner.
	A. R. P.					
OTAGO AND SOUTHLAND GOLDFIELDS—*continued.*						
CLYDE—*continued.*						
***Alluvial Claims*—continued.**						
128. 9/9/99	2 0 0	Springvale ..	..	..	..	H. H. Watson and another.
320. 17/2/00	2 0 0	Blackman's Gully	..	..	..	Sue Hack and others.
156. 7/7/00	3 0 0	West bank Molyneux R.	..	..	..	Claude F. Faisandier.
199. 13/4/01	5 0 0	Ditto ..	..	..	..	"
246. 7/9/01	2 0 0	" ..	..	..	..	F. McKenzie and another.
260. 15/10/01	4 0 0	Blackman's Gully	..	..	..	Chow Kee and others.
367. 8/11/02	2 0 0	Ditto ..	..	..	..	Frederick McCarthy.
Dredging Claims.						
37. 6/5/99	44 3 0	Section 149 ..	II.	Leaning Rock	Davis Bend ..	Davis Bend Dredging Co.
89. 26/6/99	60 1 8	" 98 ..	I.	"	New Vincent ..	Vincent Gold-dredging Co.
90. 26/6/99	96 2 33	Secs. 99 & 33	I. & VII.	"	Matau ..	Matau Dredging Co.
255. 9/12/99	26 0 15	" 105 & 155	I. & II.	"	Old Dunstan ..	Old Dunstan Dredging Co.
347. 16/3/00	68 1 24	Section 12 ..	III.	"	Monte Christo ..	Monte Christo Dredging Co.
414. 12/6/00	28 3 29	Secs. 13 & 14	"	"	Boundary Creek ..	"
431. 7/7/00	98 0 0	Section 40 ..	VII.	"	Dunstan Lead ..	Dunstan Lead Gold-dredging Co.
190. 9/2/01	12 3 6	" 35 ..	X.	"	..	John Magnus.
196. 9/3/01	88 3 0	" 100 ..	I.	"	Unity ..	Unity Gold-dredging Co.
218. 6/7/01	13 2 0	" 36 ..	X.	"	Upper Fraser ..	Upper Fraser Gold-dredging Co.
239. 10/8/01	99 2 14	" 46 ..	"	"	Sandy Point ..	Sandy Point Gold-dredging Co.
294. 12/5/02	28 2 36	Secs. 22 & 42	"	"	..	John Bourke.
295. 12/5/02	50 3 0	Section 47 ..	"	"	..	Robert Gilkison.
317. 14/7/02	50 0 0	" 161 ..	II.	"	New Leaning Rock	New Leaning Rock G.D. Co.
376. 15/12/02	17 3 36	" 109 ..	I.	"	..	Thomas Barry.
377. 15/12/02	16 3 36	" 49 ..	VII.	"	..	"
BLACK'S.						
Alluvial Claims.						
120. 1/7/98	24 2 25	Secs. 8A, 9A, 11	VII.	Lauder ..	Matakanui ..	Matakanui Gold-mining Co.
109. 10/12/92	80 2 34	" 25 & 32	"	" ..	Tinker's ..	Tinker's Gold-mining Co.
184. 18/3/96	21 0 20	Sec. 35 ..	"	" ..	Matakanui ..	Matakanui Gold-mining Co.
312. 27/4/98	26 2 7	" 3 ..	XVI.	Tiger Hill	..	William P. Guthridge.
158. 5/9/99	6 0 0	In Poolburn Creek	..	..	..	C. C. Botting.
159. 5/9/99	13 2 0	On Poolburn Flat	..	..	..	F. W. Botting and another.
161. 11/10/99	14 2 0	Maori Gully	..	Ida Valley	..	Leopold Botting and another.
109. 20/9/00	15 0 0	Near Sugar-pot	..	Matakanui	Undaunted ..	Undaunted Gold-mining Co.
194. 30/1/02	90 1 8	Sec. 44 ..	VII.	Lauder ..	" ..	"
203. 24/4/02	2 0 0	Next Sec. 25	"	" ..	Tinker's ..	Tinker's Gold-mining Co.
205. 24/4/02	17 1 10	Sec. 45 ..	"	" ..	" ..	"
216. 24/7/02	60 0 0	" 49 ..	"	" ..	Mount Morgan ..	Mount Morgan Sluicing Co.
217. 24/7/02	20 0 0	Near Sec. 44	"	" ..	Tinker's ..	Tinker's Gold-mining Co.
218. 24/7/02	6 0 0	At Black's No. 3	..	Ida Valley	..	Duncan Hardie and others.
235. 25/9/02	2 0 0	Scrubby Flat	..	German Gully	..	Edward Tupker and another.
252. 9/12/02	55 2 30	Sec. 51 ..	VII.	Lauder ..	Tinker's ..	Tinker's Gold-mining Co.
Dredging Claim.						
107. 20/9/00	99 2 0	Sec. 5 ..	XII.	Tiger Hill	Cairntrodlie ..	Cairntrodlie Gold-dredging Co.
ALEXANDRA.						
Alluvial Claims.						
287. 12/11/00	11 2 5	Sec. 1 ..	VI.	Cairnhill ..	..	James Rivers.
291. 17/12/00	2 0 0	At Butcher's Gully	..	..	..	Ah Lye and another.
381. 12/11/01	2 0 0	Conroy's Gully	..	..	..	Frederick McCarthy.
432. 15/4/02	2 0 0	East bank of Manuherikia River	..	..	..	James Rivers.
435. 18/4/02	5 0 0	Galloway Flat	..	..	..	Kathleen Thompson.
436. 18/4/02	5 0 0	"	..	..	..	Edwin Appleton and another.
437. 18/4/02	3 0 0	Sec. 2 ..	III.	Cairnhill ..	..	George Hesson and another.
439. 18/4/02	5 0 0	Galloway Flat	..	..	..	William Holihan.
440. 18/4/02	5 0 0	"	..	..	..	Craven Paget.
441. 18/4/02	2 0 0	"	..	..	..	Kathleen Thompson & another.
447. 18/4/02	2 0 0	"	..	..	..	Thomas P. Beck.
229. 1/3/97	16 2 35	Secs. 64 & 71	I.	Cairnhill ..	..	Pierce Carroll and another.
77. 12/6/99	2 0 0	Blackman's Spur	..	..	..	Robert Proffitt.
144. 11/9/99	62 3 6	Secs. 65 & 72	I.	Cairnhill ..	Last Chance ..	Last Chance H.S.E. and D. Co. (Limited).
248. 20/11/99	97 2 22	Sec. 23 ..	VI.	Tiger Hill	Bonanza ..	Alexandra Bonanza G.D. and S. Co. (Limited).

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MINING PRIVILEGES—*continued.*

Number and Date of License.	Area. A.	R.	P.	Locality.	Block.	Survey District.	Name of Claim.	Name of Registered Owner.
OTAGO AND SOUTHLAND GOLDFIELDS—*continued.*								
ALEXANDRA—*continued.*								
***Alluvial Claims*—continued.**								
354. 12/8/00	3	0	0	Butcher's Gully	..	..	..	John Eady and others.
231. 13/8/00	20	3	4	Sec. 76 ..	I.	Cairnhill ..	Last Chance ..	Last Chance H.S.E. and D. Co. (Limited).
241. 10/9/00	2	0	0	Chapman's Gully	..	..	..	Frederick McCarthy.
448. 18/4/02	4	2	0	Fourteen-mile Beach	..	..	..	William Sasse and others.
457. 13/5/02	99	2	5	Sec. 33 ..	VI.	Tiger Hill	Bonanza ..	Alexandra Bonanza H.S.E. and D. Co. (Limited).
468. 13/5/02	5	0	0	Galloway Flat	..	..	..	J. E. Thompson.
469. 13/5/02	5	0	0	"	..	..	..	J. E. Thompson and another.
482. 10/6/02	5	0	0	"	..	..	..	James Wing.
483. 10/6/02	5	0	0	"	..	..	..	James Norton.
502. 10/6/02	10	0	0	"	..	..	..	George Simpson and others.
584. 14/10/02	6	0	0	Springvale ..	..	..	..	James Gartley and another.
609. 16/12/02	23	2	20	Sec. 78 ..	I.	Cairnhill ..	Last Chance ..	Last Chance H.S.E. & D. Co.
610. 16/12/02	5	0	0	Chapman's Gully	..	..	..	W. Noble and another.
612. 16/12/02	5	0	0	Tucker Hill..	..	..	..	James Rivers.
Dredging Claims.								
180. 16/10/95	27	2	10	Section 22 ..	I.	Fraser ..	Manuherikia ..	Manuherikia Gold-dredging Co.
176. 16/10/95	57	2	0	Secs. 11, 13..	X., VII.	Leaning Rk.	Chicago ..	George Spencer.
254. 16/7/97	98	1	7	Section 9 ..	IX.	"	Manorburn ..	Manorburn Gold-dredging Co.
282. 6/12/97	20	3	24	" 5 ..	II.	Fraser ..	First Chance ..	First Chance Gold-dredging Co.
315. 12/5/98	93	0	11	" 18 ..	VII.	Leaning Rk.	Ngapara ..	Robert Ross and others.
20. 6/3/99	24	3	0	" 15 ..	III.	Cairnhill ..	Golden River ..	Golden River Dredging Co.
26. 17/4/99	99	3	0	" 10 ..	VIII.	Leaning Rk.	Olrig	Olrig Dredging Co.
				" 16 ..	VI.	Tiger Hill..		
68. 12/6/99	97	3	23	" 26 ..	X.	Leaning Rk.	Fraser Flat ..	Joseph McGeorge.
				" 40 ..	I.	Fraser ..		
69. 12/6/99	94	3	18	" 25 ..	X.	Leaning Rk.	Earnscleugh I. ..	Earnscleugh G.D. Co.
70. 12/6/99	83	3	0	" 24 ..	"	"	" II. ..	"
71. 12/6/99	100	0	0	" 23 ..	"	"	" III..	"
79. 13/6/99	100	0	0	" 39 ..	I.	Fraser ..	Golden Beach ..	Golden Beach H.E. and D. Co.
85. 26/6/99	99	0	37	" 36 ..	VII.	Leaning Rk.	Perseverance ..	Perseverance Gold-dredging Co.
86. 26/6/99	97	1	12	" 35 ..	"	"	" ..	"
81. 13/6/99	63	1	25	Secs. 17, 20	"	"	Molyneux Hydraulic	Molyneux Hydraulic Co.
				Sec. 3, pts. 2, 11	XVI.	Town of Alexandra		
				Part 1	XXI.	Ditto ..		
109. 26/6/99	29	2	26	Section 14 ..	VII.	Leaning Rk.	Enterprise ..	Enterprise Gold-dredging Co.
141. 11/9/99	98	3	2	Secs. 44, 103	I.	Fraser, Town Alexandra	Alexandra Lead ..	Alexandra Lead G.D. Co.
246. 20/11/99	27	2	0	Section 55 ..	II.	Cairnhill ..	River Molyneux ..	New River Molyneux G.D. Co.
313. 19/2/00	57	2	0	" 45A..	I.	Fraser ..	..	C. G. V. Leijon and others.
346. 12/3/00	44	2	6	" 7 ..	II.	" ..	Bendigo ..	Bendigo Gold-dredging Co.
232. 13/8/00	39	3	13	" 41 ..	VII.	Leaning Rk.	Golden Link ..	Golden Link Dredging Co.
240. 10/9/00	67	0	7	" 30 ..	VI.	Tiger Hill..	Chatto Creek ..	Benj. W. Davis and others.
269. 12/11/00	47	2	0	Secs. 13, 14..	II.	Cairnhill ..	Fourteen-mile Bch.	Fourteen-mile Beach D. Co.
454. 13/5/02	20	1	0	Section 56 ..	"	" ..	Doctor's Point ..	Doctor's Point Dredging Co.
455. 13/5/02	54	2	38	Secs. 42, 43..	IX.	Leaning Rk.	..	Jeremiah Drummey.
456. 13/5/02	97	2	4	Section 22..	VIII.	" ..	Olrig II. ..	James Rivers.
				" 29..	VI.	Tiger Hill..		
494. 15/7/02	90	1	39	Secs. 18, 37..	VIII., IX.	Leaning Rk.	..	John Gordon.
568. 14/10/02	100	0	0	Section 33A..	VI.	Tiger Hill..	..	Samuel Cameron.
569. 14/10/02	93	3	8	" 34 ..	"	" ..	..	John Pattison.
570. 14/10/02	72	3	24	" 36 ..	"	" ..	..	Thomas Wilkinson.
				" 46 ..	VIII.	Leaning Rk.		
571. 14/10/02	38	0	16	" 35 ..	VI.	Tiger Hill..	..	Harry Leicester.
288. 17/12/00	26	3	24	Secs. 54, 5 ..	II., XXI.	Cairnhill ..	Davis Bend ..	Davis Bend Dredging Co.
298. 11/2/01	35	0	38	Section 49 ..	II.	" ..	Golden Falls ..	Golden Falls Dredging Co.
329. 10/6/01	91	2	34	Secs. 22, 26; 27, 28; 4	VII., X., XVI.	Leaning Rk. Alexandra	Enterprise ..	Enterprise Gold-dredging Co.
384. 12/11/01	59	1	0	Section 47 ..	I.	Fraser ..	Clyde	Clyde Dredging Co.
395. 11/2/02	86	3	0	Secs. 34, 8 ..	I., II.	" ..	Sailor's Bend ..	Sailor's Bend Dredging Co.
431. 15/4/02	11	3	35	Section 6 ..	XVII.	Cairnhill ..	..	Duncan Bringans.
Quarts Claims.								
121. 1/7/92	27	1	25	Section 8 ..	II.	Cairnhill ..	..	Robert Symes.
139. 3/10/93	8	3	34	Secs. 23, 24..	"	" ..	..	"
234. 27/4/97	9	2	32	Section 46 ..	"	" ..	..	"
19. 6/3/99	19	2	0	" 52 ..	"	" ..	..	Francis W. Gray.
407. 11/3/02	15	0	0	Conroy's Gully	..	..	..	Grade M. Symes.
129. 2/6/93	30	0	0	Section 9 ..	VII.	Teviot ..	..	John Ewing.
128. 29/8/93	61	0	17	Sections 6, 8	"	" ..	..	"
319. 27/6/98	10	3	27	Section 34 ..	V.	" ..	Pleasant Valley ..	Pleasant Valley G.M. Co.
4. 9/3/99	3	0	0	..	II.	" ..	..	Thos. P. Michelle and another.
33. 20/4/99	97	3	30	Section 30 ..	I.	" ..	Roxburgh Amalgamated	Roxburgh Amalgamated Sluicing Co.
98. 26/6/99	50	1	35	" 1 ..	X.	Long Valley	Enterprise ..	Enterprise H.S. Co,

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MINING PRIVILEGES—*continued.*

Number and Date of License.	Area.	Locality.	Block.	Survey District.	Name of Claim.	Name of Registered Owner.
	A. R. P.					
OTAGO AND SOUTHLAND GOLDFIELDS—*continued.*						
ROXBURGH.						
Alluvial Claims.						
105. 13/7/99	3 0 0	Commissioner's Flat	..	..	..	Joseph Haughton and others.
220. 26/10/99	7 0 0	Horseshoe Bend	..	..	..	Robert Stewart.
221. 26/10/99	12 0 0	..	II.	Teviot ..	..	A. J. Manuel and another.
283. 14/12/99	5 0 0	Beaumont Run	..	..	..	William Pearson.
338. 22/2/00	3 0 0	Near Ettrick	..	..	Digger's Pride ..	James Kitto.
246. 16/8/00	3 2 0	Moa Flat ..	..	..	..	William N. McLean.
345. 14/2/01	12 0 0	Section 75 ..	II.	Teviot ..	..	T. P. Michelle and another.
440. 15/8/01	22 2 31	" 1 ..	"	Whitecomb	..	James Logan.
471. 14/11/01	1 2 0	Roxburgh East	..	..	Roxburgh Amalgamated	Roxburgh Amalgamated Sluicing Co.
523. 14/11/01	18 2 30	Sec. 41 ..	I.	Teviot ..	..	Richard George and others.
528. 13/3/02	5 0 0	Lower Pomahaka	..	..	..	James McKenzie and others.
560. 15/5/02	18 0 0	Part Sec. 2 ..	XII.	Whitecomb	..	Frederick Beverley.
586. 14/8/02	4 2 0	..	VIII.	Benger ..	..	M. Russell and others.
594. 11/9/02	100 0 0	Sec. 1 ..	I.	St. Abbs ..	Fortification ..	John T. Johnson.
620. 13/11/02	59 2 16	" 74 ..	"	Teviot ..	Ladysmith ..	Ladysmith Gold-dredging Co.
629. 18/12/02	100 0 0	" 24 ..	VII.	Benger ..	..	John Ewing.
630. 18/12/02	45 2 15	" 23 ..	"	" ..	..	"
Dredging Claims.						
214. 18/2/97	46 3 8	Sec. 96 ..	III.	Benger ..	Otago ..	Otago Gold-dredging Co.
252. 18/6/97	11 2 16	Secs. 66, 101	VIII., III.	" ..	Miller's Flat Electric	Miller's Flat Electric D. Co.
29. 20/4/99	100 0 0	" 54, 19, 18	I., VII., & XIV.	" ..	Gold King ..	Joseph Sparrow.
28. 20/4/99	80 2 35	Secs. 75, 102, 84	II., III., VI.	" ..	Golden Run ..	Golden Run Dredging Co.
92. 26/6/99	61 3 16	" 33, 95 ..	VI. & III.	" ..	Golden Gate ..	Golden Gate Dredging Co.
108. 26/6/99	66 0 0	" 98, 84, 61	III., VI., & VIII.	" ..	Golden Treasure ..	Golden Treasure Dredging Co
110. 26/6/99	51 3 24	Sec. 94 ..	III.	" ..	Golden Run ..	Golden Run Dredging Co.
127. 7/9/99	10 0 0	Ruby Creek	..	" ..	..	William Murray.
143. 11/9/99	57 0 0	Secs. 80, 30 ..	III. & VI.	" ..	..	John Pringle and others.
152. 26/10/99	62 1 0	Sec. 67 ..	VIII.	" ..	Majestic ..	Majestic Gold-dredging Co.
260. 14/12/99	95 3 32	Secs. 45, 73 ..	I. & II.	Teviot ..	Teviot	Teviot Gold-dredging Co.
262. 14/12/99	41 2 0	Section 13 .. / " 25 ..	VII. / "	" / Benger	Main Lead ..	Main Lead Hercules G.D. Co.
263. 14/12/99	34 2 29	" 46 ..	I.	Teviot ..	Golden Elbow ..	Golden Elbow Dredging Co.
264. 14/12/99	21 1 8	" 39 ..	V.	" ..	" ..	"
305. 22/2/00	57 2 0	" 77 ..	II.	Benger ..	Golden Horseshoe	Golden Horseshoe Dredging Co.
345. 22/2/00	5 0 0	Near Sec. 65	VIII.	" ..	..	Robert C. Whyte.
382. 26/4/00	4 1 2	Sec. 48 ..	I.	Teviot ..	Golden Elbow ..	Golden Elbow Dredging Co.
419. 14/6/00	13 0 24	" 41 ..	VIII.	" ..	..	Arthur Richards.
420. 14/6/00	21 3 4	" 11 ..	XI.	" ..	Malone's Beach ..	Malone's Beach Dredging Co.
448. 12/7/00	30 3 0	" 18 ..	XII.	Benger ..	Gunton's Beach ..	Gunton's Beach Amal. G.D. Co.
236. 16/8/00	37 2 0	" 103 ..	III.	" ..	..	James Murray.
237. 16/8/00	29 2 0	" 69 ..	VIII.	" ..	..	William Murray.
245. 16/8/00	59 2 30	" 72 ..	I.	Teviot ..	Kohinoor ..	Molyneux Kohinoor D. Co.
254. 16/8/00	81 3 2	" 79 ..	II.	" ..	Lady Roxburgh ..	Lady Roxburgh G.D. Co.
256. 16/8/00	61 3 10	" 11 ..	VII.	" ..	Endeavour ..	Endeavour Gold-dredging Co.
266. 13/9/00	35 2 24	" 22 ..	XII.	Benger ..	Ruby	Ruby Gold dredging Co.
281. 11/10/00	14 3 12	" 20 ..	"	" ..	Gunton's Beach ..	Gunton's Beach Amal. Co.
298. 16/11/00	49 2 0	" 56 ..	I.	Teviot ..	Rox. Jubilee ..	New Roxburgh Jubilee Co.
321. 22/12/00	99 2 22	" 70 ..	VIII.	Benger ..	Golden Bed ..	Golden Bed Dredging Co.
360. 14/3/01	19 2 0	" 46 ..	"	Teviot / "	Ext. Fourteen-mile Beach	Extended Fourteen-mile Beach Gold-dredging Co.
361. 14/3/01	8 2 24	" 47 .. / " 21 ..	III.	" / Cairnhill		
377. 18/4/01	74 0 30	" 83 ..	II.	Teviot ..	Coal Creek Flat ..	Coal Creek Flat Dredging Co.
384. 18/4/01	91 0 12	" 55 .. / " 11 ..	VIII. / ..	Benger / Town of Ettrick	Ettrick	Ettrick Gold Steam D. Co.
468. 17/10/01	10 0 0	..	II.	Benger ..	Island Block ..	Island Block G.D. and S. Co.
510. 13/2/02	85 3 0	Secs. 73, 88 ..	I. & II.	Teviot ..	..	Robert Cockburn.
511. 13/2/02	11 1 17	Sec. 89 ..	II.	" ..	..	"
514. 13/2/02	14 2 15	Secs. 103, 103A	III.	Benger ..	Otago	Otago Gold-dredging Co.
519. 13/2/02	50 0 0	" 88, 43, 87	V., V., & II.	Teviot ..	Long Valley ..	Long Valley Gold-dredging Co.
559. 15/5/02	28 3 27	Sec. 89 ..	VIII.	" ..	Sixteen-mile Beach	E. S. Paterson and another.
570. 12/6/02	8 0 0	" 75 ..	"	Benger ..	Ettrick	Ettrick Gold Steam D. Co.
571. 12/6/02	16 2 16	" 68 ..	I.	" ..	..	Robert Craig.
587. 14/8/02	3 0 0	..	III.	" ..	Majestic ..	Majestic Gold-dredging Co.
595. 11/9/02	21 1 0	Sec. 42 ..	VIII.	Teviot ..	..	Laurence Ryan.
634. 18/12/02	48 0 35	Secs. 19, 21 ..	XII.	Benger ..	Gunton's Beach ..	Gunton's Beach Amal. Co.
LAWRENCE.						
Alluvial Claims.						
26. 26/4/99	61 3 7	Blue Spur ..	XVIII.	Tuapeka E.	Blue Spur ..	Blue Spur and Gabriel's Gully Consolidated Gold Co.
71 22/5/99	58 3 29	Waipori ..	XIV.	"	Lammerlaw Flat ..	William Edward Caudwell and William E. S. Knight.

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MINING PRIVILEGES—*continued.*

Number and Date of License.	Area.	Locality.	Block.	Survey District.	Name of Claim.	Name of Registered Owner.
OTAGO AND SOUTHLAND GOLDFIELDS—*continued.*						
LAWRENCE—*continued.*						
	A. R. P.	*Alluvial Claims*—continued.				
86. 1/6/99	34 2 0	Waitahuna ..	VI.	"	Lower German Flat	A. Sutherland and party.
101. 27/6/99	20 3 9	Munro's Gully	VIII.	"	Perseverance ..	John Kitto and party.
104. 1/7/99	48 1 18	"	XVIII., XIX.	"	..	Edward Mills and E. Browne.
107. 1/7/99	70 2 15	Waitahuna ..	V. / VII.	Waitahuna East / Table Hill	Sailor's Gully ..	Sailor's Gully (Waitahuna) Gold-mining Co.
135. 7/8/99	10 1 36	" ..	V.	Waitahuna East	City of Dublin ..	Joseph Ferris and party.
192. 23/10/99	6 0 0	Glenore ..	IV.	Table Hill	..	John Stewart.
33. 11/12/99	18 1 32	Waipori ..	VI., VIII.	Waipori ..	..	Lewis Pearsall.
147. 2/7/00	70 3 34	Beaumont ..	VII. / XV.	Beaumont / Crookston	Undaunted ..	John Edie and J. Kirkpatrick.
213. 22/10/00	38 2 26	Waipori ..	XIV.	Tuapeka E.	..	Sew Kew.
240. 10/12/00	60 3 0	" ..	" / IV.	" / Waipori ..	Farrell's Deep Lead	William John Farrell.
242. 10/12/00	19 0 0	Crookston ..	XV.	Crookston	..	John Whelan and E. Curtin.
4. 7/1/01	90 1 0	Wetherstone's	X., XIX.	Tuapeka E.	Golden Crescent ..	Golden Crescent Sluicing Co.
48. 22/4/01	49 2 27	Waipori ..	XIV.	"	Golden Point ..	John Claffey.
82. 22/7/01	55 2 24	" ..	VI.	Walpori ..	Post office Creek ..	Post-office Creek (Waipori) Gold-mining Co.
172. 10/2/02	8 0 0	" ..	..	" ..	..	William Jennings.
181. 24/2/02	14 0 0	German Flat	VI.	Tuapeka E.	German Flat ..	John Girvan and S. Johnston.
201. 14/4/02	14 0 0	Tuapeka Flat	XX.	"	..	Thomas Sing Lee.
278. 8/9/02	29 2 0	Bungtown ..	IX.	"	..	William Brown and party.
282. 8/9/02	5 2 0	Waipori ..	XIV.	"	..	Richard John Cotton.
290. 22/9/02	47 1 27	Wetherstone's	XIX.	"	Local Industry ..	Local Industry Gold-mining Co.
296. 22/9/02	8 0 0	Waipori ..	XIV.	"	Golden Point ..	John Claffey.
310. 20/11/02	57 2 32	Wetherstone's	X., XIX.	"	Golden Rise ..	W. Forrest Smyth and party.
315. 14/11/02	34 1 24	Waipori ..	XIV.	"	..	T. F. Quilter and V. Kirby.
7. 22/3/99	5 0 0	Waitahuna ..	..	Waitahuna	..	Thomas Quilter and party.
154. 11/9/99	3 0 0	Tuapeka Flat	XIX.	Tuapeka W.	..	Watts Goodwin.
229. 12/11/00	2 0 0	Wetherstone's	..	Tuapeka E.	..	Michael Whelan.
228. 26/5/02	3 0 0	Waipori ..	..	Waipori ..	..	George Edward Bertenshaw.
237. 9/6/02	4 0 0	Waitahuna ..	VII.	Table Hill	Sailor's Gully ..	Sailor's Gully (Waitahuna) Gold-mining Co.
257. 14/7/02	2 0 0	Waipori ..	III.	Hedgehope	..	Robert Forrest.
258. 14/7/02	2 0 0	" ..	"	"	..	Andrew Wilson.
272. 11/8/02	3 0 0	Wetherstone's	XIX.	Tuapeka E.	..	John Wilson Christie and others.
283. 8/9/02	5 0 0	Munro's Gully	XVIII.	"	..	James Dunnett.
		Dredging Claims.				
51. 8/5/99	16 0 0	Glenore ..	..	..	Stirling G.D. Co...	John Nelson.
74. 22/5/99	86 3 20	Waipori ..	V.	Waipori ..	Golden Shore Gold-dredging Co.	C. Leijon and B. Throp.
88. 1/7/99	170 2 35	" ..	XIV. / IV. / VII.	Tuapeka E. / Waipori .. / Town of Waipori	Upper Waipori ..	Upper Waipori Alluvial G.D. Co.
158. 1/10/99	185 2 0	" ..	XIV.	Tuapeka E.	Jutland Flat ..	Jutland Hydraulic Dredging Co.
32. 8/1/00	68 1 0	Tuapeka M'th	I.	Waitahuna West	Scottish Chief ..	Scottish Chief Dredging Co.
34. 8/1/00	83 0 0	Waipori ..	VI.	Waipori ..	Enfield	Enfield Gold-dredging Co.
35. 8/1/00	67 3 0	Beaumont ..	IV.	Beaumont	Golden Mile ..	Golden Mile Gold-dredging Co.
37. 8/1/00	75 1 0	Tuapeka Flat	XX.	Tuapeka E.	Gabriel G.D. Co...	John Harris and party.
44. 12/2/00	66 3 3	Waitahuna ..	XXXIV.	Town of Havelock	McCormick D. Co.	Robert Johnston.
47. 12/2/00	60 2 20	Waitahuna ..	XXXI., XXXIV.	Town of Havelock	Manuka D. Co. ..	Alfred Carter Broad.
50. 12/2/00	60 3 27	Tuapeka Flat	IV.	Tuapeka W.	Reliance ..	Reliance Gold-dredging Co.
127. 1/6/00	67 2 2	Beaumont ..	I.	Crookston	Golden Gravel ..	Golden Gravel Gold-dredging Co.
177. 13/8/00	27 0 0	Tuapeka Flat	VI. / IV.	Tuapeka W. / Tuapeka E.	Lawrence ..	Lawrence Gold-dredging Co.
194. 10/9/00	18 0 0	"	..	..	Lawrence ..	"
224. 12/11/00	69 1 0	Waipori ..	V., VIII.	Waipori ..	Lower Enfield ..	Lower Enfield G.D. Co.
8. 7/1/01	99 0 36	Beaumont ..	VII. / IX. / XV.	Beaumont / Benger .. / Crookston	Golden Glen ..	Golden Glen Dredging Co.
19. 11/2/01	94 3 25	Waitahuna ..	XXXIII., XXXIV. / X.	Town of Havelock / Waitahuna East	Imperial Gold-dredging Co.	George Scott.
23. 25/2/01	96 3 10	Molyneux M'th	I.	S. Molyneux	..	James Drysdale.
24. 25/2/01	100 0 0	Waipori ..	IV.	Waipori ..	Perseverance Gold-dredging Co.	James McNeil.
44. 22/4/01	100 0 0	Beaumont ..	"	Beaumont	Champion ..	Champion Gold-mining Co.
84. 22/7/01	61 1 32	Waitahuna ..	X.	Waitahuna East	Waitahuna ..	Waitahuna Dredging Co.
134. 1/11/01	47 3 0	Beaumont ..	IV.	Beaumont	Golden Mile ..	Golden Mile Gold-dredging Co.
138. 12/11/01	100 0 0	Waipori ..	"	Waipori ..	Waipori Consolidtd.	Waipori Consolidated Gold-dredges.
154. 1/2/02	29 3 15	Tuapeka Flat	III.	Tuapeka E.	Tuapeka ..	Tuapeka Dredging Co.
182. 24/2/02	14 0 0	Waipori ..	V.	Waipori ..	Empire ,, ..	Empire Gold-dredging Co.

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MINING PRIVILEGES—*continued.*

Number and Date of License.	Area. A.	R.	P.	Locality.	Block.	Survey District.	Name of Claim.	Name of Registered Owner
OTAGO AND SOUTHLAND GOLDFIELDS—*continued.*								
LAWRENCE—*continued.*								
***Dredging Claims*—continued.**								
184. 10/3/02	48	3	38	Tuapeka Flat	IX.	Waitahuna West	Evans Flat ..	Evans Flat Dredging Co
					"	Tuapeka W.		
185. 10/3/02	14	0	0	Waipori ..	V.	Waipori ..	Empire	Empire Gold-dredging Co.
193. 14/4/02	98	3	12	" ..	IV.	" ..	Oceanic	Oceanic Steam G.D. Co.
194. 14/4/02	59	1	22	" ..	IV., V.	" ..	..	Thomas Sing Lee.
227. 26/5/02	10	0	0	" ..	IV.	" ..	..	William Edward Short Knight.
273. 25/8/02	88	3	0	" ..	V.	" ..	Empire	Empire Gold-dredging Co.
277. 25/8/02	14	0	0	Waipori ..	..	" ..	..	Thomas F. Quilter and party.
					VI., IX.	Tuapeka W.		
289. 22/9/02	49	2	7	Tuapeka Flat	IV.	Tuapeka E.	Lawrence ..	Lawrence Gold-dredging Co.
					X.	Waitahuna West		
291. 22/9/02	80	3	0	Waipori ..	V.	Waipori ..	Success	Success Gold-dredging Co.
					X.	Waitahuna East		
292. 22/9/02	85	1	24	Waitahuna ..	XVI., XXXIII., XXXIV.	Town of Havelock	Havelock ..	William McKenzie and party.
297. 13/10/02	84	1	27	Waipori ..	XIV.	Tuapeka E.	Bakery Flat ..	Bakery Flat Sluicing Co.
115. 7/5/00	2	1	1	Wetherstone's	X.	"	Happy Valley ..	Happy Valley Gold-dredging Co.
					"	Waitahuna East		
259. 14/7/02	3	0	0	Waitahuna ..	XXXIII.	Town of Havelock	Imperial ..	George Scott.
Sea-beach Claims.								
203. 14/4/02	5	0	0	Molyneux M'th	I.	N. Molyneux	..	Thomas Hines.
204. 14/4/02	5	0	0	"	"	"	..	Thomas Johnston.
205. 14/4/02	5	0	0	"	"	"	..	James Herring.
Quartz Claims.								
5. 6/3/99	16	2	17	Table Hill .	V.	Table Hill	Table Hill ..	John Lawson.
42. 26/4/99	76	1	32	Waipori .	IV.	Waipori ..	O.P.Q. Mine ..	O.P.Q. (Waipori) Gold-mines.
153. 11/9/99	5	2	28	" .	"	" ..	..	Robert Cotton.
174. 9/10/99	28	2	20	" ..	"	" ..	..	"
93. 22/7/01	10	0	0	Table Hill .	V.	Table Hill	Table Hill ..	John Lawson.
202. 14/4/02	10	0	0	Waipori ..	XIV.	Tuapeka E.	Bella Reef ..	Samuel Stewart and party.
Mineral License.								
22. 22/1/01	85	0	0	Waitahuna Heights	VII., IX.	Waipori ..	Waitahuna Cinnabar	Waitahuna Cinnabar Co.
DUNEDIN.								
Alluvial Claims.								
4. 14/8/99	36	0	32	Sec. 4 ..	VII.	Lee Stream	..	Deep Stream Amalgamated Hydraulic Sluicing Co.
				" 4 ..	X.	Sutton ..		
5. 14/8/99	40	0	0	Sec. 1 ..	XII.	" ..	..	Ditto.
				" 5 ..	VII.	Lee Stream		
6. 8/8/99	13	2	12	" 5 ..	X.	Sutton ..	..	"
7. 8/8/99	3	3	17	" 9 ..	VII.	Lee Stream	..	"
1. 1/2/00	5	0	0	" 4 ..	"	"	..	"
3. 23/6/99	27	3	24	Secs. 4, 5, 7, 8	VI.	Nenthorn ..	..	Wolter and party.
WAIKAIA.								
Alluvial Claims.								
37. 6/6/99	5	0	0	Nokomai ..	VII.	Nokomai ..	Sew Hoy ..	Nokomai Hydraulic Sluicing Co.
41. 1/7/99	40	0	0	" ..	"	" ..	Nokomai Victory	John France.
57. 1/8/99	5	0	0	Waikaia ..	V.	Waikaia ..	..	Wm. Hendry.
74. 5/10/99	2	0	0	" ..	I.	" ..	..	Leung Chun.
89. 3/10/99	70	1	0	Nokomai ..	"	Nokomai ..	Lion	Lion Gold-mining Co.
103. 5/11/99	4	0	0	" ..	VIII.	" ..	..	H. T. Selwood and party.
107. 5/11/99	2	0	0	Wendon ..	I.	Wendon ..	..	Lye Chun and party.
128. 19/12/99	26	1	1	Waikaia ..	VI.	Waikaia ..	Piano Flat ..	Piano Flat H.S. Co.
50. 3/4/00	69	3	35	" ..	I., III.	" ..	Argyle	Argyle Hydraulic Sluicing Co.
56. 1/5/00	39	3	0	" ..	VI.	" ..	..	Robert Hutton.
57. 1/5/00	61	2	0	Nokomai ..	VII.	Nokomai ..	Sew Hoy ..	Kum Poy.
58. 1/5/00	34	0	0	" ..	"	" ..	" ..	Sew Hoy.
104. 1/10/00	74	3	24	Wendon ..	V.	Wendon ..	Break-'em-All ..	Winding Creek Gold-mining Co.
14. 7/5/01	35	0	0	Waikaia ..	"	Waikaia ..	Gow's Creek ..	Gow's Creek Gold-mining Co.
15. 7/5/01	41	1	0	" ..	"	" ..	" ..	"
1. 4/2/02	6	0	0	" ..	VI.	" ..	Piano Flat ..	Piano Flat Co.
7. 8/4/02	20	0	0	Nokomai ..	VII.	Nokomai ..	Sew Hoy ..	Nokomai Hydraulic Sluicing Co.
11. 8/4/02	5	0	0	Waikaia ..	V.	Waikaia ..	..	R. C. McKay.
12. 8/4/02	5	0	0	" ..	"	" ..	..	Hector McKay.
22. 6/5/02	32	3	0	Nokomai ..	I., IV.	Nokomai ..	Sew Hoy ..	Nokomai Hydraulic Sluicing Co.
23. 6/5/02	20	0	0	Waikaia ..	V.	Waikaia ..	Gow's Creek ..	Gow's Creek Gold-mining Co.
24. 6/5/02	5	0	0	Nokomai ..	VII.	Nokomai ..	..	T. F. Goldie.
26. 8/7/02	5	0	0	Waikaia ..	V.	Waikaia ..	..	Eric White.
28. 8/7/02	5	0	0	" ..	"	" ..	..	A. Kennedy and party.
32. 5/8/02	5	0	0	Nokomai ..	VII.	Nokomai ..	..	John France.

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MINING PRIVILEGES—*continued.*

Number and Date of License.	Area.	Locality.	Block.	Survey District.	Name of Claim.	Name of Registered Owner.
	A. R. P.					
OTAGO AND SOUTHLAND GOLDFIELDS—*continued.*						
WAIKAIA—*continued.*						
Dredging Claims.						
49. 3/4/00	78 2 4	Waikaia ..	VI.	Waikaia ..	Nugget ..	Daniel Ferguson.
9. 5/3/01	99 0 0	" ..	I., VIII.	" ..	Switzer's ..	Switzer's Dredging Co.
11. 5/2/01	53 1 0	Wendon ..	I.	Wendon ..	..	T. F. Goldie.
27. 2/7/01	99 3 16	" ..	XXI.	" ..	Mystery Flat ..	Mystery Flat Gold-dredging Co.
32. 8/10/01	100 0 0	" ..	I.	" ..	..	R. W. Hall.
4. 4/3/02	69 1 30	" ..	"	" ..	Muddy Creek ..	Muddy Creek Co.
19. 6/5/02	67 0 0	" ..	"	" ..	..	Robert Boag.
20. 6/5/02	57 1 0	" ..	XXI.	" ..	..	T. F. Goldie.
21. 6/5/02	100 0 0	Waikaia ..	I.	Waikaia ..	Hessey	Hessey's Dredging Co.
31. 5/8/02	64 2 0	Wendon ..	"	Wendon ..	..	D. M. Cameron.
34. 6/10/02	88 0 0	" ..	"	" ..	..	Thomas Taylor.
TAPANUI.						
Dredging Claims.						
4. 20/2/00	46 2 30	Pomahaka River	VIII.	Greenvale	..	Daniel Dougherty.
6. 17/7/00	1 2 0	Ditto ..	"	" ..	..	"
12. 16/4/01	26 1 36	Glenkenich ..	III.	Glenkenich	..	Robert Foster.
GORE.						
Dredging Claims.			Section.			
13. 20/7/99	19 0 0	Waikaka ..	9	Waikaka ..	..	Globe Co.
16. 17/8/99	36 0 9	" ..	9	Chatton ..	..	"
23. 21/9/99	10 0 0	Otama ..	2	Otama ..	..	David Richardson.
26. 21/9/99	94 2 0	Chatton ..	14	Chatton ..	..	Paterson's Freehold Co.
27. 21/9/99	90 3 0	" ..	14	" ..	..	"
28. 21/9/99	58 1 0	" ..	18	" ..	..	Waikaka United Co.
29. 21/9/99	99 0 0	" ..	9	" ..	..	"
35. 19/10/99	15 0 0	" ..	14	" ..	..	Lavington G. Roope and others.
41. 19/10/99	66 3 0	" ..	9	" ..	..	John W. Byars.
42. 19/10/99	93 1 0	" ..	14	" ..	..	Henry Pemble.
43. 19/10/99	79 1 30	" ..	14	" ..	..	Michael Louis Spratt.
45. 23/11/99	8 0 0	" ..	14	" ..	..	Lavington G. Roope and others.
47. 23/11/99	6 1 0	Waikaka ..	2	Waikaka ..	..	Robert Sheddan.
3. 1/1/00	62 0 0	" ..	2	" ..	..	"
5. 1/1/00	99 0 20	" ..	8	Chatton ..	..	Adam J Nichol.
9. 1/1/00	58 1 32	Croydon ..	872	Hokonui ..	..	David Richardson.
22. 19/4/00	57 3 10	Chatton ..	14	Chatton ..	..	William F. Bennetts and others.
29. 23/11/99	35 1 0	" ..	18	" ..	..	Waikaka Queen Co.
37. 1/9/00	100 0 0	" ..	2	" ..	..	Robert Lee.
8. 6/2/00	58 3 0	" ..	3	" ..	..	Thomas A. Fleming.
4. 1/3/98	27 1 3	" ..	14	" ..	..	Lavington G. Roope and others.
45. 18/10/00	99 2 27	" ..	9	" ..	..	Waikaka United Co.
46. 1/11/00	95 0 38	Waikaka ..	14	" ..	..	Phœnix Co.
47. 1/11/00	11 0 0	" ..	14	" ..	..	Robert E. Edge.
53. 1/12/00	44 1 0	Croydon ..	864	Hokonui ..	..	Central Mataura Co.
4. 21/2/01	36 1 36	Waikaka ..	14	Chatton ..	..	Lavington G. Roope and others.
6. 21/3/01	6 1 0	" ..	14	" ..	..	William F. Bennetts and others.
7. 16/4/01	6 1 0	" ..	9	" ..	..	Globe Co.
8. 18/4/01	61 0 34	Chatton ..	14	" ..	..	William Brownlie and others.
9. 22/5/01	16 1 0	Waikaka ..	9	" ..	..	William Hugh Paterson.
10. 22/5/01	67 2 0	Chatton ..	10	" ..	..	Thomas H. Ibbotson and others.
12. 25/10/01	70 0 0	Croydon ..	854	Hokonui ..	..	John M. Graham.
13. 5/12/01	10 0 0	Charlton ..	495	" .	..	The MacCharlton Co.
14. 5/12/01	5 0 0	" ..	495	" ..	..	Charlton Creek Co.
2. 6/3/02	3 0 0	" ..	487	" ..	..	Lady Charlton Co.
4. 24/4/02	10 0 0	Waikaka ..	4	Chatton ..	..	Samuel A. McIntosh.
8. 21/8/02	66 1 0	Croydon ..	853	Hokonui ..	..	Central Mataura Co.
9. 21/8/02	42 1 0	Waikaka ..	14	Chatton ..	..	William H. Grey.
11. 4/9/02	6 0 0	" ..	..	" ..	..	Robert S. White.
12. 25/9/02	7 0 0	" ..	2	Waikaka ..	..	Frederic T. King and another.
13. 25/9/02	52 3 5	Maitland ..	1 to 16	Maitland Vil.	..	Robert S. White.
14. 23/10/02	63 1 0	Croydon ..	852	Hokonui ..	..	Central Mataura Co.
15. 27/11/02	7 0 0	" ..	854	" ..	..	George Taylor.
RIVERTON.						
Alluvial Claims.			Block.			
253. 1/10/99	39 1 29	..	VII.	Longwood	Smith Company ..	Smith Gold-mining Co.
376. 1/2/00	57 0 0	Section 29 ..	"	"	..	Ourawera Gold-mining Co.
427. 1/3/00	94 1 37	Sections 8, 10	VIII.	Pegasus ..	..	J.W. Murdock & J.W. Thomson.
428. 1/3/00	56 1 35	Section 21 ..	VII.	" ..	..	E. C. Stewart & W. Thomson.
452. 31/10/99	5 2 0	Orepuki ..	..	..	Undaunted ..	L. Cross and others.
618. 17/4/01	90 2 8	Section 33 ..	VII.	Longwood	..	Round Hill Mining Co.
619. 17/4/01	94 2 38	" 32 ..	"	"	..	"
663. 2/10/01	2 0 0	Round Hill ..	..	..	..	Ellen Smith & C. E. Hopgood.
703. 14/1/02	4 0 0	Riverton ..	..	..	..	William Boyd.
709. 4/2/02	9 0 0	Section 34 ..	VII.	Longwood	..	Ourawera Gold-mining Co.
726. 9/4/02	27 3 22	" 36 ..	"	"	Jewett's Gully No. 2	Joseph Harrison.
731. 7/5/02	29 2 22	" 21 ..	"	"	Jewett's Gully ..	"
743. 22/7/02	2 1 0	Round Hill ..	..	..	..	Ourawera Gold-mining Co.
775. 25/10/02	5 0 0	Colac ..	..	..	..	James Phillips.

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MINING PRIVILEGES—*continued.*

Number and Date of License.	Area.	Locality.	Block.	Survey District.	Name of Claim.	Name of Registered Owner.
		OTAGO AND SOUTHLAND GOLDFIELDS—*continued.*				
		BIVERTON—*continued.*				
			Mineral License.			
777. 11/11/02	A. R. P. 94 0 0	Sections 13, 14, 19	VII.	Pegasus ..	..	J. R. Thomson, R. Fraser, and J. Thomson.
			Quartz Claims.			
121. 21/3/99	77 3 15	Secs. 11, 12, 15	IV.	Preservation	Morning Star ..	New Star Gold-mining Co.
426. 1/5/00	29 1 8	" 1, 2, 3	III.	"	Venus	F. G. Cray.
583. 13/2/01	29 2 0	Section 4 ..	"	"	Venus Extended ..	T. M. Gillies.
613. 17/4/01	100 0 0	" 8 ..	I.	Anglem ..	Baden Powell .	R. Graham, H. Graham, and W. T. Widdowson.
614. 17/4/01	99 0 0	..	"	" ..	" ..	Ditto.
		OREPUKI.				
			Alluvial Claims.			
46. 7/8/00	4 0 0	Orepuki ..	..	..	..	J. W. Wilson, F. H. Wilson, D. Dundas, H. Dundas, A. Hodgkinson, and L. G. Roope.
47. 7/8/00	..	" ..	..	..	..	W. S. Todd, J. Kingsland, and A. M. Dawson.
70. 1/11/00	3 3 0	" ..	..	..	..	J. S. Evans, J. Evans, W. Evans, and E. Evans.
183. 14/8/01	2 0 0	" ..	..	..	..	E. Crabb and Wm. Cummings.
152. 28/1/02	19 3 0	West Waiau	..	..	..	J. Hinchey and W. Hinchey.
153. 28/1/02	13 3 31	"	..	..	..	"
176. 22/7/02	5 0 0	Orepuki ..	..	..	..	J. Arthur, jun., W. Atley, F. Quinn.
		WYNDHAM.				
			Dredging Claims.			
37. 4/4/99	15 3 27	Otara ..	VII.	Otara ..	..	William Bennett.
48. 3/4/00	64 3 25	Oteramika ..	"	Oteramika	..	William Timpany.
61. 14/8/00	43 2 0	" ..	XXIV.	"	..	John Mitchell, jun.
62. 21/11/00	45 0 0	Wyndham ..	52	Wyndham	..	William R. Perkins.
64. 21/11/00	26 0 0	" ..	44	"	..	"

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SCHOOLS OF MINES.

These institutions continue to serve a good purpose in affording mining students and candidates for certificates as mine-managers and battery-superintendents an opportunity for gaining knowledge in the several branches of work connected with the mining industry.

At the last examination of schools of mines students Mr. J. H. Adams, of Thames, succeeded in obtaining a scholarship which entitles him to three years' instruction at the Otago University at Dunedin without cost, and also a grant of £50 per annum.

THAMES SCHOOL OF MINES.

Mr. F. B. Allen, M.A., B.Sc., the late Director, who resigned to take a position under the Government of Western Australia, has been succeeded by Mr. O. G. Adams, F.C.S., A.O.S.M.

Mr. Adams reports as follows :—

The attendance has been somewhat limited owing to the depression existing at Thames. However, towards the end of the year prospects seemed to be brightening, and so the outlook for 1903 is promising.

In July Mr. F. B. Allen, M.A., B.Sc., resigned the position of Director, having been appointed to a similar position in Western Australia. The vacancy thus caused here was filled by my appointment, and I took up my duties on the 28th August. Owing to my recent arrival here my report will necessarily be somewhat incomplete.

Mr. A. H. V. Morgan, M.A., assistant lecturer; Mr. E. G. Wright, lecturer and instructor in electricity; and Mr. T. J. Mountain, drawing-master, have all done excellent work, and brought their students well on.

The annual examinations, held in December, were supervised by myself and my assistant. The results are given in tabulated form attached to this report. Mr. J. H. Adams succeeded in winning the University scholarship, and did exceedingly well, gaining 75 per cent. or over in fourteen subjects. He also gained the President's medal for the best all-round student, and Mr. R. W. Powell's medal for mathematics.

As a result of the January, 1902, Government examination of candidates for mine-managers' and battery-superintendents' certificates several students were successful.

I have pleasure in acknowledging the generous support and co-operation that the Council and the secretary, Mr. Albert Bruce, have accorded me. Towards the end of the year I recommended the purchase of an optical lantern, camera, lantern-slide maker, screen, and accessories, to be used for illustrating the lectures, so that the system of instruction might be brought quite up to date. The Hon. James McGowan, Minister of Mines, generously agreed to subsidise the Council's funds at the rate of £3 to £1 up to a total expenditure of about £40, to provide the money with which to purchase the instruments. I have no doubt that the use of the optical lantern for lecture purposes will tend to increase the attendance, and to improve the results at the annual examinations.

At the annual meeting of subscribers, held at the school on the 10th February, 1903, the following officers were elected: President, Mr. Mathew Paul; vice-president, Mr. W. Baker; treasurer, Mr. J. Hague Smith; Council, Captain T. C. Bayldon, Messrs. E. F. Adams, E. Murphy, J. McLaren, and R. W. Powell.

The experimental plant treated nine parcels during the year. There were 177 assays made for the public, also fifty-one assays and analyses for the Mines Department. Besides these there were a number of assays made in connection with the work in the battery.

In the latter part of 1901 the Council of the Thames School of Mines thought it advisable, in view of the importance of electricity to the mining industry, to start a class in that subject. The Minister of Mines was approached, and a Government grant obtained towards the expense of the class. The services of Mr. E. G. Wright, a pupil of Dr. Henderson, of the London Polytechnic, were secured, and the lectures commenced early in February, 1902. A dynamo and motor were obtained temporarily for the use of the class till the permanent machines and instruments could be obtained from England. These arrived in June, and were installed in a workshop which had been erected. The equipment is very complete, and contains all that is necessary to give the student intending to make electrical engineering his profession a good grounding in this science. The dynamo, driven by a 5-horse-power Pelton wheel, is capable of giving 20 amperes at 100 volts, and may be driven for experimental purposes either as a shunt or compound wound machine. The main switchboard is of marble, and contains double-pole switch, double pole, safety fuses, volt, and ampere-meters. The whole of the connections are easy of access, so that they may be varied for experimental work. A six-way distributing-board controls the lighting arrangements and the currents supplied to bench terminals, the latter having a pressure of 100 volts between them. A small experimental machine has also been provided. This may be run in a number of different ways—viz., as an alternating dynamo or motor, a continuous dynamo or motor, or as a motor dynamo or rotary converter. There are a number of instruments, including mirror, galvanometer, post-office Wheatstone bridge, tangent galvanometers, and magnetic pendulum; also model armature, showing the winding on a modern drum-wound dynamo. The school is lighted up throughout by electricity, all the work of wiring and fitting having been done by the students under the supervision of the lecturer; and it speaks well for the thoroughness of this work that it was able to pass the severe test made by the Inspector of the Underwriters'

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Association with a considerable margin to spare. The course is intended to follow the syllabus set for the examination of the City and Guilds Institute in electro-technology, and there are at present twenty candidates for the examination to be held in May, 1903. The classes are well attended, and this, the first effort in this district at technical work in this branch, should lead to the establishment of considerable interest in electric science.

TABLE of ATTENDANCES for the Year ending 31st December, 1902.

Name of Subject.	First Term.	Second Term.	Third Term.
Registered students	53	47	33
Saturday science class	60	66	55
Total number of students	113	113	88

RESULTS OF ANNUAL EXAMINATIONS, 1902.

The following table shows the results of the late annual examinations:—

Subject of Examination.	First Class.	Second Class.	Third Class.	Failed.	Total.
Practical chemistry (senior)	1	...	...	...	1
Practical chemistry (junior)	...	1	...	...	1
Theoretical chemistry (senior)	1	...	...	...	1
Theoretical chemistry (junior)	...	...	...	1	1
Theoretical chemistry (elementary)	1	1	10	2	14
Practical assaying (senior)	2	1	1	...	4
Practical assaying (junior)	3	1	...	...	4
Practical assaying, wet (senior)	1	...	...	...	1
Practical assaying, wet (junior)	...	...	...	...	...
Mineralogy	1	...	...	...	1
Metallurgy of gold and silver	2	...	...	...	2
Mining	1	...	...	...	1
Ventilation	1	...	...	...	1
Pumping and winding	1	...	...	...	1
General and mining geology	1	...	...	...	1
Land and mine surveying	1	...	...	...	1
Mathematics	1	...	...	...	1
Mechanical drawing	1	1	1	...	3
Explosives	1	...	...	...	1

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COROMANDEL SCHOOL OF MINES.

The Director, Mr. D. V. Allen, A.O.S.M. (who is also manager of the battery connected with the school), reports as under:—

School.

I have to report as follows on the work and progress of the school for the year ending the 31st January, 1903:—

Notwithstanding the rather depressed state of our local mining industry, I am pleased to state that the school has passed through a fairly successful year. The attendance steadily increased during the year, as seen by the following table:—

	Number of Students.	Average Attendance.
First term	16	33
Second term	19	39
Third term	23	47

There is every reason to believe that the numbers will be maintained during the coming year; in fact, sixteen students have already joined.

The Australasian Institute of Mining Engineers has this year offered two prizes of £10 and £5 respectively for the best essays on any scientific topic, competition to be confined to school of mines students.

Our course of instruction included theoretical and practical chemistry, metallurgy, wet and dry assaying, mining, &c., land and mine surveying, mathematics, and mechanical drawing. A good deal of useful field-work was done in connection with the survey class. Good work was also done in the laboratory, including analysis of minerals and cyanide extraction tests on gold-ores.

Thirty-two assays for the public were done by myself during the year, chiefly bullion and gold-ore assays.

My thanks are due to Mr. R. E. Jamieson, who for some time acted as instructor in mathematics.

The annual school of mines examinations took place last December. Eleven of our students presented themselves, and the certificates obtained were five first, seven second, and four third class.

Last year one student sat for the first-class mine-managers' examination, and was successful in passing therein. For this year's examination we have four candidates for first-class mine-manager and two for battery-superintendent. The results, however, will not be known for some time.

Numerous donations of rocks and minerals have been received, including a large collection from the Waihi School of Mines.

Our school was well represented in the Gold Jubilee Exhibition, and obtained first award for its collection of minerals.

A 2 in. water-pipe has been laid on to the school, and it is intended to erect a small Pelton wheel to drive a rock-section grinder for the geological class.

Battery.

During the year twenty-two parcels of ore were treated at the battery. These comprised 79 tons of general ore, 6½ tons of tailings, 30 lb. of concentrates, and 695 lb. of picked stone. The total yield of retorted gold was 1,048 oz. 10 dwt., valued approximately at £3,050.

A much-needed want has been supplied by the construction of a new water-race, which carries ample water for all purposes. The race delivers into a wooden tank, from which independent pipes supply the tables, berdans, and engine.

The oil-engine gave less trouble than formerly. Past experience has proved that it is better not to attempt to run both the stamps and berdans together, as the work is too heavy on the engine.

Great credit is due to Mr. Hugh McDonald, the amalgamator, for the zealous manner he has carried out his duties.

Report of Council.

In presenting a general report of proceedings during the past year, and in reviewing the work accomplished in comparison with previous periods, the Council—fully considering the decreased population of the district—have great pleasure in reporting to the members and general public of Coromandel as to its efficient state, and upon the favourable results both in the school and the Government examinations.

During the year, with the assistance of the Mines Department in allowing us a special grant, we were enabled to replenish our stock of chemicals and other requisites; so that the several branches of instruction have been carried on without inconvenience to the Director or students.

To further extend the scope of instruction, the Council purpose erecting a grinding and facing plant, which will be very advantageous in geological classification and research. A portion of the plant is already in hand, the same having been procured by the school in connection with its exhibits at the late Auckland Exhibition. As motive power it is proposed to erect a small Pelton wheel, to be connected with the county main water-supply, the particulars and cost of which have been satisfactorily arranged. It will be again necessary to materially add to our general stock of school materials and apparatus, so that during the coming year we may be enabled to successfully carry out the full course of instruction. In furtherance of these matters the Council purpose again approaching the Mines Department for assistance.

The visiting committee's monthly report remarks very favourably upon the general working of the school, and upon the attention and deportment of the students; and the Council are of opinion,

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[illegible] from the increased interest displayed and additional students who have already enrolled, that the year now entered on will be even more successful than the past.

The plant is being treated for the extraction of the gold contained in the parcels of quartz. The particulars relating to same are duly reported by the battery-manager. To increase the efficiency of the plant it is proposed to alter some of the pump-valves and belt connections, and other minor matters as found necessary.

The cost of crushing has been somewhat reduced, and the Council trust, on the proposed alterations being completed, to be enabled to still make further concessions under this head.

WAIHI SCHOOL OF MINES.

Mr Percy G. Morgan, M.A., Director, supplies the following report:—

During the past year the school has been well attended, the average number of registered students being forty-one. This is an increase of four over the attendance in 1901, the average for that year being forty-seven. The great majority of these students entered the school for the first time, most of the previous year's students having either completed their studies or left the district. On referring to the subjoined table of attendances for the year it will be seen that most of the classes were fairly well attended, the more popular subjects being mineralogy and blowpipe, mathematics, mining, assaying, and surveying, whilst geology, metallurgy, and (to a less extent) the two chemistry classes attracted but little attention.

TABLE of ATTENDANCES for the Year ending 31st December, 1902.

Name of Subject.	First Term.	Second Term.	Third Term.
Mining	16	20	18
Mathematics	23	24	23
Theoretical surveying	17	16	11
Practical surveying	13	17	7
Geology	4	...	...
Mineralogy and blowpipe	...	...	26
Theoretical chemistry	8	11	6
Practical chemistry	7	10	9
Wet and dry assaying	15	22	18
Metallurgy	5	5	6
Drawing	8	14	11
Totals	116	139	135
Individual registered students	46	54	53

Much the same course of instruction has been followed as in former years, but a slightly higher standard has been aimed at, and I believe attained, though not without the expenditure of much painstaking labour by the staff, who are handicapped here, as in other schools of mines on this goldfield, by inadequate apparatus and teaching accessories, by the backward state of many pupils on their entrance, by the irregular attendance of some, and, above all, as it seems to me, by the want of suitable text-books in a majority of the subjects. Owing to this latter disadvantage much time is occupied in dictating notes, which means a great loss of teaching-power. This matter of text-books is one which I should like to see taken up by the Government, for there can be no doubt that the class of students attending the schools of mines on this goldfield requires special text-books, concisely written but full, up to date, and adapted to the needs of a practical man who has little book knowledge but is anxious to learn.

The following is a summary of the work done in the various classes:—

(1.) *Mining* (Lecturer, the Director).—This was one of the best-attended classes in the school, the average attendance being eighteen. The instruction given embraced the subjects of shaft-sinking, opening out and exploitation of mines, use of timber, iron, and masonry as supports for mine-workings, pumping, hauling and winding, mine-ventilation, tapping water, dams, blasting, explosives, strength of materials, and mining geology. In this class it is endeavoured to cover the ground required by the Government examiners in the mining subjects of the coal- and quartz-mine managers' examinations. A few years ago it was not impossible to do this in one year, but now, owing to the higher standard that seems to be required (and rightly, in my opinion), an elaborate course of instruction has to be given in order to prepare candidates sufficiently. Owing to the uncertainty of work in most mining districts, and a spirit of restlessness which is fostered by the fluctuating nature of his employment, the average miner, especially if young or unmarried, seldom stays more than a year or two in one place. Partly for this reason the courses of instruction in the Waihi School of Mines are confined to twelve months, thus giving the wandering miner an opportunity of obtaining a fair knowledge of any one subject in that time. Last year, however, notwithstanding extra hours of instruction, the syllabus of the mining course was not quite overtaken.

(2.) *Mathematics* (Instructor, Mr. F. T. Seelye).—During 1902 this was the best-attended class in the school, the attendance being 23·7. The instruction given was individual, and adapted as far as possible to each student's needs. The work done comprised the whole subject of

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arithmetic, together with special exercises in mining calculations and problems, use of logarithms, formulæ, and a little algebra.

(3.) *Theoretical Surveying* (Lecturer and instructor, the Director).—The average attendance in this class was 14·7. The work done comprised elementary trigonometry, including solution of triangles, filling up traverse sheets, calculating areas, calculating closing lines, mine-surveying problems, elementary levelling, &c.

(4.) *Practical Surveying* (Instructor, the Director).—The average attendance in this class was 12·3. The members were taught chaining both of horizontal and of sloping lines; uses and adjustment of the theodolite, miners' dial, dumpy level, &c. A considerable amount of field-work was done by the members of this class, including the checking of the local meridian by daylight observations of a star.

(5.) *Geology* (Lecturer, the Director).—During the first term instruction was given to four students in general geology, but their interest soon fell off, and the class was discontinued at the end of the term. The small attendance in this class is to be attributed principally to the fact that it is not often taken up by first-year students such as comprised the majority of those attending last year. A number of students, however, have stated their intention of taking up this important subject during the coming year, and I anticipate a good class. It may not be out of place for me to say that great advances in the study of mining geology have been made during recent years, and a very wide field is now opening up for the trained mining geologist. The subject of geology is therefore becoming more and more important in connection with the working of all classes of ore-deposits, and is one that must not be neglected by modern mine-managers.

(6.) *Mineralogy and Blowpipe* (Lecturer, the Director).—During the last term a course of lectures of a popular character was given in this subject, and was largely attended. The subject-matter of these lectures included physical characters of minerals, blowpipe tests, the six crystallographic systems, &c. The lectures were illustrated by numerous experiments, and by the handing-round of some hundreds of specimens.

(7.) *Theoretical Chemistry* (Lecturer, Mr. F. T. Seelye).—The average attendance in this class was 8·3. The course of instruction comprised the chemistry of the non-metallic elements and of the alkali metals, together with the atomic theory, physico-chemical laws, chemical arithmetic, &c. It is to be regretted that more students did not avail themselves of instruction in a subject which is not only interesting in itself, but also of the greatest value to all assayers and battery-superintendents, and is a science of which every mine-manager also ought to acquire at least the rudiments.

(8.) *Practical Chemistry* (Lecturer and instructor, Mr. F. T. Seelye).—The average attendance was 8·7. The instruction given in this class comprised methods of preparing oxygen, hydrogen, chlorine, and carbon-dioxide; tests for metals and acids; separation of the metals; manipulation of chemical apparatus; and quantitative analysis of simple substances.

(9.) *Dry and Wet Assaying* (Lecturers and instructors, the Director and Mr. F. T. Seelye).—The average attendance was 18·3, which is not quite up to last year's average. The work done in this class comprised the whole of Park's "Assaying and Practical Chemistry," with the exception of two or three analyses, which seem out of place in a school of mines course. Some good work was done by the students in dry assaying, but those who took up wet assaying made but very moderate progress. The results of their practical work were in many cases far more inaccurate than they ought to have been. The fact is that one and all lack an adequate knowledge of theoretical and practical chemistry. Despite all advice, our students will neglect these subjects, and devote their main efforts to learning how to "do" the copper assay, the iron assay, &c. Their usual method of preparing for an examination is to learn the text-book description off by heart. From the point of view of a worried school of mines teacher, it would be a good thing if the term "assaying" (which in its very derivation savours of the empirical) were tabooed, and some such name as "economic quantitative analysis" substituted.

(10.) *Metallurgy of Gold and Silver* (Lecturer, the Director).—The average attendance in this class was 5·3. Last year's course of instruction included crushing and concentrating machinery, amalgamating processes and machines, cyanide process, chlorination process, bromination process, lixiviation processes for silver-ores, roasting and smelting furnaces. The members of this class were specially prepared for the Government examination for battery-superintendent's certificate. Partly on this account, perhaps, this was one of the subjects in which the want of a suitable text-book was much felt.

(11.) *Drawing* (Instructor, Mr. R. H. Mitchell).—This class was fairly well attended during the year, the average number of pupils being eleven. The instruction given was of a valuable character, and comprised elementary geometrical drawing; machine-drawing, both from copies and from actual examples; some architectural drawing, and the plotting and drawing of survey-plans.

Changes in Staff.—I have again to record a change in the teaching staff, Mr. A. H. V. Morgan, M.A., who had ably acted as assistant lecturer for twelve months, having left in March to take up the duties of first assistant at the Thames School of Mines. Mr. F. T. Seelye, A.O.S.M., who was selected to fill the vacancy, arrived in April, and has since then been of great assistance in carrying on the work of the school. During the month preceding Mr. Seelye's arrival, Mr. Leslie Jolly, A.O.S.M., acted capably as temporary assistant.

Examinations.—At the annual Government examinations for schools of mines, held during December, twenty-two of our students presented themselves, a greater number than in any former year. Altogether forty-three papers, representing every subject on the list except mathematics, were given in. The detailed results which are just to hand, show that six first-class, twenty-two second-class, and thirteen third-class certificates were obtained, whilst the remaining two papers failed to reach the standard required for a certificate.

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In one group of subjects—namely, theoretical chemistry, practical chemistry, and wet assaying (which is really a branch of practical chemistry)—the results here, as in other schools of mines, are poor, and reveal the presence of a weak spot. The reason for this weakness is referred to elsewhere in a paragraph written before the examination results had come to hand. The remedy is not so obvious; but this may be said that the cure rests not so much with the teaching staff, or even with the pupils, as with a higher authority.

The examination results as a whole, however, represent much hard work on the part of our students, and if one makes allowance for the various disadvantages under which many labour they may be considered to have done very well; but the attainment of a still higher standard is much to be desired. In order to facilitate this end, further aids to teaching in the way of apparatus, models, and accommodation are very necessary, especially if the attendance should increase, as seems likely, beyond last year's average (fifty-one).

Last year the school sent up ten candidates for mine-managers' and battery-superintendents' certificates, with the result that three obtained first-class mine-managers' certificates, one a first-class coal-mine manager's certificate, one passed as a battery-superintendent, and two obtained partial passes as mine-managers equivalent to second-class certificates. Several students also were successful in obtaining winding engineers' certificates.

Laboratory.—During the year a cupel-machine was added to the laboratory equipment, and new benches of a substantial character constructed. Forty public assays for gold and silver were made, besides three for gold alone, one bullion assay, one amalgamation assay, six copper assays, one zinc assay, three iron assays, and an analysis of a mineral supposed by the sender to be scheelite, but which turned out to be barytes or heavyspar—in all, ninety-four determinations. In addition, a number of mineral specimens were examined and named for various inquirers free of charge. As in former years, a good deal of special work was done in the laboratory by the more advanced students and by the staff. I quote the following results, which are of more or less outside interest:—

(1.) Fibrous white mineral from the Waihi Extended shaft (depth, about 430 ft.): Hardness equals 2·5 to 3; specific gravity equals 2·17; B.B. swells up and fuses at about 2·5; gelatinizes with HCl. Analysis gave (excluding 3·02 per cent. of moisture): Loss on ignition (combined with water), 14·35 per cent.; silica, 53·43 per cent.; alumina, 21 per cent.; calcic oxide, 10·41 per cent.: total, 99·20 per cent. The mineral is therefore a zeolite, and is near laumontite in composition and most physical characteristics. The specimen analysed appeared to be somewhat decomposed, which explains the low hardness and rather high percentage of silica.

(2.) Rock-analyses (partial):—

—	H_2O lost at 100° C.	Loss on Ignition.	SiO_2.	Al_2O_3.	FeO.	CaO.	MgO.	MnO.
1	1·12	1·65	59·65	17·06	6·58	6·14	4·30	Very strong traces.
2*	2·34	3·68	59·38	16·06	6·26	4·30	2·61	Strong traces.
3	...	...	72·25	13·71	1·84	2·52	1·91	Strong traces.
4	...	...	70·34	15·75	1·86	2·94	Traces	Strong traces.
5	...	...	70·37	15·82	2·17	1·70	Traces	Strong traces.
6	...	...	73·08	13·50	2·73	1·07	0·15	Traces.

* Note.—The analysis of No. 2 was made on a sample dried at 100° C.

No. 1 was a dark andesite from the Waihi West C shaft; depth about 300 ft. No. 2 was a dark-grey andesite, with reddish decomposed feldspar crystals, from the Waihi Company's No. 1 shaft; depth about 500 ft. The rock contained a carbonate (no doubt $CaCO_3$) and a little iron-pyrites. No. 3 was spherulitic rhyolite from Katikati Heads. No. 4 was a coarsely crystallized rhyolite from the hills east of Waihi. No. 5 was a rhyolite with interrupted flow structure (wilsonite) from a quarry about two miles west of Waihi. No. 6 was a light-coloured, close-grained rhyolite from quarry near Silverton Road, Waihi.

(3.) Clarendon phosphate rock: Moisture lost at 100° C., 1·05 per cent.; silica, 0·68 per cent.; carbonate of lime, 5 per cent.; calcium-phosphate (with some aluminium-phosphate and traces of iron-phosphate), 88·91 per cent.; undetermined, 4·41 per cent. The percentage of phosphoric oxide, as determined by careful assay of the calcuim-phosphate precipitate, was 35·745, corresponding to 78·04 per cent. of $Ca_3(PO_4)_2$, so that the percentage given above is too high.

(4.) Analysis of barytes, forwarded from Nelson (Denniston): Barium-sulphate, 98·33 per cent.; strontium-sulphate, doubtful trace; calcium-sulphate, traces; magnesia, trace; alumina and ferric oxide, 1·69 per cent.; moisture lost at 100° C., 0·04 per cent.; loss on ignition, 0·19 per cent.: total, 100·25 per cent.

Mineral Collection.—As in former years, a considerable number of rock and mineral specimens have been obtained locally for the school collection, which is still, for the want of suitable accommodation, in great part packed away in boxes or on high shelves. Various friends have presented the school with a number of interesting specimens, chiefly of gold-ores. Among these donors may be mentioned the Hon. the Minister of Mines, who forwarded several good specimens of the phosphate rock recently discovered at Clarendon, Otago. The analysis of a portion, quoted above, shows that it was of very good quality. It need hardly be said that mineral specimens, &c., are always acceptable at institutions like ours, and it is to be hoped that Inspectors of Mines, whose constant visits to mines give them exceptional facilities for collecting, will not fail to take the hint, and forward as many specimens as possible to the various schools of mines throughout the colony.

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Theodolite.—Our old theodolite having through constant use got into a very bad state of repair, application for a new one was made to the Mines Department, which kindly forwarded a 5 in. Watts theodolite about the end of September. Our thanks are due for the gift, though its value was somewhat discounted by a request for the return of the old instrument, which, though almost useless for accurate work, would still have been useful for placing in the hands of raw beginners.

Library.—During the year the library has been much used and appreciated by the students. Thanks must be given to the Mines Department for the following pulications: *New Zealand Mines Record;* Mines Report; Coal-mines Commission Report; Park's "Geology of Mines and Minerals" (twelve copies); Government Geologist's "Report on Seismic Disturbances at Cheviot," and Report on Deep-level Mining at the Thames. A few books have been procured during the year, making altogether about a hundred volumes, besides Government publications; but many more are needed in order to bring the library up to date and increase its sphere of usefulness.

In conclusion, I have to thank the Council for the efficient manner in which they have conducted the business of the school and attended to its various requirements. Thanks are due also to Messrs. A. H. V. Morgan, M.A., and F. T. Seelye, A.O.S.M., who have successively filled the post of assistant lecturer; to Mr. Leslie Jolly, A.O.S.M., temporary assistant; to Mr. R. H. Mitchell, who has conducted the drawing class with marked ability during the year; and to Clarence King and Stafford Clark, laboratory assistants.

KARANGAHAKE SCHOOL OF MINES.

Mr. R. B. McDuff is the Director of this school.

The following is the annual report of the Council:—

It affords the Council great pleasure to present the fourth annual report on the work done and the results obtained during the year ending the 31st December, 1902.

Attendance.—During the year the attendance was a slight increase on that maintained for the previous twelve months, being for the three terms 32·3 students, taking an average number of 104 classes. With the improvement in mining matters at present obtaining in this district, even larger attendance can be looked for during the present year.

Equipment.—As stated at the last annual meeting, the equipment of the school for the advantageous study of the subjects embraced in the curriculum was fairly complete, and during the year a few additions—notably a set of bullion rolls for the assay class and some additional text-books—have been added, and the Council have lately received an offer from the Very Rev. Dean Hackett of some further technical works, which will greatly enhance the value of our library. The Council take this opportunity of reminding all members of the institute, whether students or not, that they are entitled to the use of the books of the library at any time, provided the book is not taken away from the building, and, as these works comprise most of the best authorities on any of the mining branches practised in this district, members may gain great help by taking advantage of their privileges in this respect.

Examinations.—At the examination for mine- and battery-managers' certificates held last year six candidates were provided by the school. They sat at Waihi, and the results showed four to have gained first-class certificates, one a partial pass, and one to have failed. Owing to the inconvenience journeying so far in order to sit, the Council forwarded a recommendation to the Board of Examiners that Karangahake be appointed an examination centre in future, and the Board has been pleased to grant this.

At the annual Government examinations in connection with the schools of mines throughout the colony, held in December last, thirteen students presented themselves, and the results to hand show the Karangahake School to have headed the honour list for New Zealand, in spite of the fact that several other schools boast a larger attendance and presented a greater number of candidates, and, further, that this school is the youngest in the colony. This must be most gratifying to the members and students, and especially to the Director (Mr. McDuff), whose painstaking efforts have been a continual source of pleasure to the Council.

The gold medal offered by our President (A. H. Curtis, Esq.) to the student gaining the highest aggregate in any five subjects was won by Mr. R. D. Jones with an aggregate of 376, Mr. F. Cordes being next with 348.

Receipts and Expenditure.—The treasurer's statement shows the total receipts from all sources to have been £322 16s. 6d., while the expenditure totalled £232 12s. 8d., leaving a credit balance at bank and in hand of £90 3s. 10d.

Recommendations.—The Council before retiring from office wish to recommend to the new Council that immediate steps be taken to enlarge the school building, the present assay department especially being totally inadequate to accommodate the large class taking this course, the Director having had, perforce, to split the class, thus doubling his work in this particular subject, in order to overcome the difficulty of accommodation. The Council therefore recommends that the Government be approached with the request for a special grant to carry out these additions.

Election of Officers and Councillors.—During the year our President, vice-president, and one Councillor left the district, the Council under by-law 11 appointing Mr. T. G. Vinson to fill the vacancy caused by the resignation of Mr. Travers.

REEFTON SCHOOL OF MINES.

Mr. T. O. Bishop, A.O.S.M., the Director, submits the following report:—

On my arrival here late in June I found that no effort had been made either by the students or the committee to carry on the work of the classes between the time of Mr. Lee's resignation and

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my own appointment. I therefore visited the various mines and mills within reach, and succeeded in enrolling in all sixty-five students, and these formed three separate classes—viz., one in Reefton, one in Crushington, and one at Progress Mine.

The subjects taken up were practical and theoretical chemistry, assaying, surveying, mining, metallurgy, and mathematics, and the following table shows the average attendance in each:—

Subject.	Total Number.	Average Attendance.
Mining	16	9
Surveying	16	9
Chemistry	18	11
Assaying	13	6
Mathematics	23	10
Metallurgy	8	5

These figures include the three classes already mentioned.

Only eleven of our students sat for the annual examination, and, though the actual results were somewhat low, there were reasons why this was only to be expected—that is, that some of our students had not had quite six months' tuition, and the whole ground covered by the examination papers had not been gone through. The results were as follows:—

—	Practical Chemistry (Junior).	Theoretical Chemistry (Junior).	Theoretical Chemistry (Elementary).	Practical Assaying (Senior).	Practical Assaying (Junior).	Metallurgy of Gold.	Mining.	Surveying.
N. Lawn	...	...	...	77	...	...	...	...
R. Cowles	...	...	...	...	65	51	...	...
S. Weston	61	27	...	...	46	...	...	...
R. Wynn	...	...	69	...	87	...	...	...
F. Hansby	26	...	53	...	...	...	...	...
J. Auld	...	...	...	...	...	...	...	43
J. Oats	...	...	...	...	...	...	...	44
W. Saunders	...	...	...	...	...	...	27	...
B. McGrath	...	...	...	...	...	...	33	...
W. S. Lawn	...	...	...	...	...	...	39	40
W. Blackadder	...	...	...	...	...	59	...	...

The work in the practical classes—chemistry, assaying, and surveying—was greatly hampered by our want of material and equipment, and in all classes by the very scattered nature of the district and the long distances students have to travel to attend. For the surveying class we have now received from the Mines Department a new level, staff, and 5-chain tape, so that we are now well equipped in this respect, and I anticipate good work during the present year. For the assaying class we have received a new balance and flatting-mill, which will fill a long-felt want, but we are still in need of many things for this and also for the chemical classes.

The only sources of income for the school are the grant from the Mines Department and the students' fees, but I am of opinion that at least £50 a year might be raised locally by an energetic committee, and am in hopes that this will be done in the present year. Then, if the Department would also subsidise this amount, or even subsidise the full amount of our fees, instead of only up to £50, as at present, we should be able to conduct the school with much more success.

In regard to assays for the public, there appears to be very little prospecting going on in the district, and the established mines, with one exception, employ their own assayers. I have put through thirty-seven samples in all since I have been in charge.

In conclusion, I have to express my thanks to Mr. Ashby, our secretary, and to the other members of the committee for their assistance in the work of the school, and hope that we shall be able at the end of this year to show a marked improvement in our practical results.

WESTPORT SCHOOL OF MINES.

The hon. secretary, Mr. E. Young, reports as follows for the year ended 31st March, 1903:—

In the absence of a regular Instructor, practical teaching has been carried on by the President (Mr. Bradley) and Mr. Sydney Fry. There has been an average attendance of five students. Mr. Fry has now kindly offered to act as Instructor, and a fresh start will shortly be made under his tuition.

The work done in the school during the year has included seventy-six chemical and fire assays of gold-bearing and other minerals, besides twenty-two coal-analyses, and a large number of miscellaneous tests. Some volumetric analysis was also done.

A special feature of the work during the past six months has been the analysis of samples of local, colonial, and foreign coal. This work has been performed by Mr. Percy Bingham, Admiralty Coal Inspector, and Mr. J. Bradley, manager of the Corporation gasworks and President of the school.

In view of the great utility of thorough coal-testing appliances in a district like this, the school has ordered from Messrs. Fletcher, Russell, and Co., Warrington, England, a complete plant for coal-analysis, towards the cost of which the Westport Coal Company has generously donated the sum of £10. This plant will include apparatus for the analysis of the gases derived from coal.

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The specimens of coal lately tested included samples from all parts of the local mines, and the results showed the Westport article to be one of the purest in the world. They also revealed the important fact that dip coal contains very little sulphur as compared with other kinds.

The school aims at acquiring the fullest possible information on this subject, and will prove as useful in connection with the coal industry as with other branches of mining. The laboratory is well supplied with apparatus and chemicals, and there is a good collection of mineral specimens, which is being constantly added to. A second-hand theodolite for teaching surveying is still a desideratum.

The want of a building of our own is a great drawback, as the rent of the present premises is a heavy tax on the resources of the school. A site was granted to our institution for this purpose, but we have since been informed that the Justice Department intend to use it for the extension of the Court buildings, and the committee are anxiously awaiting definite information on this point.

The text-books used in the school and the fees charged to students and members are the same as stated in last annual report.

NELSON SCHOOL OF MINES.

Mr. W. F. Worley, the Instructor, reports as follows:—

Blowpipe Analysis Classes.

Two classes, an upper and a lower, were in session from 18th February to 25th November. With the exception of one or two unavoidable breaks, each class met weekly. The total number of boys belonging to these classes during the year was nineteen; two left during the year, leaving seventeen on the roll at the end of the year. The average attendance was rather more than twelve. The curriculum of study was similar to that of past years, and included the testing for gold by panning off in the dish, and when necessary the treating of the heavy residues with nitric acid; amalgamating the free gold with mercury, and thus recovering the gold in one piece after the mercury had been distilled off. Each boy was also taught how to use the blowpipe for the identification of ores of lead, tin, bismuth, arsenic, zinc, copper, manganese, chrome, antimony, iron, nickel, and cobalt. The boys in the upper class were also instructed how to take the specific gravity of a piece of metal, an ore, or a rock.

Assaying.

Only three assays were made for the public during the year, and not one of these calls for special mention.

Assaying Class.

I have long wished to hold a class for instruction in assaying, but the smallness of my laboratory has made it impossible. This year, however, a former pupil of my blowpipe analysis class was so anxious to learn assaying that I undertook to give him a course of lessons. By the end of the year he was about half-way through the intended course, and had been taught how to sample ores ready for assaying, and the usual fire assay of gold-bearing ores. If my laboratory were larger there would be no difficulty in getting several young men to take up this work.

Lectures.

Two lectures on agricultural science were delivered before members of the Farmers' Union. The first lecture was given at Wakefield, and the other at Waimea West. In each of these lectures special stress was laid on the law of "minimum supply" of plant-food, or, in other words, it was clearly demonstrated that a satisfactory crop could not be produced if only *one* element of plant-food was missing in the soil. The importance of chemistry to agriculture was emphasized, and farmers were advised to find out what elements of plant-food were needed by each crop, and to see that the soil contained or got those elements in sufficient quantities. As an outcome of these lectures, one Wakefield farmer was induced to manure his hop-field with all the chemicals needed to produce a good crop of hops. As a result he had a good crop, and his hops have been declared by an expert to be the best in the district for this year.

OTAGO UNIVERSITY SCHOOL OF MINES.

Professor James Park, F.G.S., Director, reports as follows:—

The mining school for the session ending the 31st October, 1902, showed the satisfactory attendance of thirty-two registered students, and one casual student for one subject only—namely, practical assaying. The registered students attended with the intention of going through one or more of the courses prescribed in the calendar for the several divisions of the school. Of these, seven entered for their first year, leaving twenty-five in their second or third year.

Of students who entered for their final year, four completed their studies with success, and, having presented satisfactory certificates of time spent in practical mining or metallurgical operations, as required by Regulation 9, were awarded the diplomas and certificates to which they were entitled, as follows: John McKinlay, certificate of Metallurgical Chemist and Assayer; George Edward D. Cotton, diploma of Associate in Mining and certificate of Metallurgical Chemist and Assayer; John Porteus, diploma of Associate in Mining and certificate of Metallurgical Chemist and Assayer; John Henderson, B.Sc., diploma in Mining and certificate of Metallurgical Chemist and Assayer.

Diplomas and certificates were issued during the year to eight students who had previously passed their class examinations, on the production of the necessary certificates relating to practical work, as follows: Norman R. Fisher, diploma of Associate in Mining; George H. Royse, diploma of Associate in Metallurgy; William Shand Watt, diploma of Associate in Metallurgy; Adam Hay, diploma of Associate in Metallurgy; William E. Barron, diploma of Associate in Metallurgy;

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Basil R. Lusk, diploma of Associate in Metallurgy; Ormsby Gore Adams, diploma of Associate in Metallurgy; George Scott Orbell, diploma of Associate in Mining, diploma of Associate in Metallurgy, certificate of Metallurgical Chemist and Assayer, and certificate of Land and Mine Surveyor.

Annual Examinations.

The attendance in the different classes and the results of the annual examinations in the subjects of instruction in the mining school prescribed by the regulations for the different courses are shown in the following tabulated statement:—

Subject of Examination.	Results.				
	Attendance.	First Class.	Second Class.	Third Class.	Failed.
General geology (senior)	5	1	2	2	...
General geology (junior)	7	2	2	2	1
Mining geology ...	3	...	1	2	...
Mineralogy	13	1	5	5	2
Petrography	8	4	...	2	2
Applied mechanics	18	1	8	7	2
Land and mine surveying (senior .	8	5	...	3	...
Land and mine surveying (junior) .	10	4	6	...	...
Mining (senior)	4	1	2	1	...
Mining (junior)	8	1	6	1	...
Metallurgy—first course	10	3	3	2	2
Metallurgy—second course	5	...	2	3	...
Blowpipe analysis	9	3	5	1	...
Assaying—first course	9	1	7	1	...
Assaying—second course	5	1	4	...	...

The teachers of the subjects enumerated in the above table were as follows: Dr. Marshall—geology, mineralogy, petrography; the Director—applied mechanics, mining, surveying, mining geology; Mr. Waters—metallurgy, assaying, blowpipe analysis.

Students in their first or second year, according to their standing, attended the University classes in mathematics, theoretical mechanics, theoretical physics, practical physics, theoretical and practical chemistry; and three students qualifying for the diploma of Associate in Geology, for the natural-science requirements of Bachelor of Science degree, and for honours in geology attended the class in palæontology. The results of the examination in these subjects are as follows:—

Subject of Examination.	Results.				
	Attendance.	First Class.	Second Class.	Third Class.	Failed.
Mathematics	8	...	1	3	4
Theoretical mechanics	9	...	2	4	3
Theoretical physics	10	...	2	6	2
Practical physics	12	...	3	7	2
Theoretical chemistry	6	3	2.	1	...
Practical chemistry	5	1	3	1	...
Palæontology	4	1	1	1	1

The teachers in the different subjects were as follows: Professor Gibbons—mathematics; Professor Shand—theoretical mechanics, theoretical physics, practical physics; Professor Black—theoretical chemistry, practical chemistry; Professor Benham—palæontology.

Students in the different divisions, according to their standing, had to attend the drawing classes at the School of Arts. Mr. Hutton reports satisfactory progress in every case. The results of his examinations are given below:—

Subject of Examination.	Results.		
	Attendance.	First Class.	Second Class.
Machine construction and drawing	4	2	2
Solid geometry	2	2	...
Practical geometry	4	3	1
Model-drawing	4	2	2

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Ulrich Medal.—This medal is appropriately awarded in each year to the best student in mineralogy and petrography. It was open for competition for the first time in 1902, and was secured by James Allan Thomson with a first class in each subject.

New Zealand University Examinations.—Five students presented themselves for examination in different sections of the B.Sc. degree in mining and metallurgical engineering, one student for honours in science, two for senior scholarships, and three for final examination in B.Sc. The results were eminently satisfactory, and in several directions established records, which rendered the year 1902 memorable in the history of the mining school. Of the five in the B.Sc. division, Norman R. Fisher succeeded in passing the third and final examination, thereby securing the first B.Sc. degree in mining engineering granted by the New Zealand University. He passed the class-subjects at the mining school some years ago, having been a student of the late Director in mining, of Dr. Don in geology, and of Mr. Begg in surveying. Mr. Fisher subsequently pursued his studies with unremitting diligence, and must be congratulated on the successful attainment of his object. David M. Tomlinson, following the footsteps of Mr. Fisher, passed the second examination for B.Sc. in metallurgical engineering; William Gibson and H. Roy Macdonald, part of the first examination in mining engineering; and John Henderson, B.Sc., certain subjects in metallurgical engineering.

The highest distinction aimed at by mining students in previous years was the diploma of Associateship, but in the past three years there has been a growing desire on the part of a few to qualify for the higher degree of B.Sc. in mining or metallurgical engineering, and it is not improbable that in coming years many will elect to follow this course. It is needless to say that the New Zealand University requires a higher standard of attainment for its B.Sc. degree than the mining school for its diploma of Associateship.

John Henderson, B.Sc., also sat for honours in science, and was successful in gaining first-class honours in geology. This is the second occasion on which this distinction has fallen to the University of Otago, and the first time it has been secured by a student of the mining school.

Arthur R. Andrew, in the University Senior Scholarship examination, secured the scholarship in physics, and J. Allan Thomson the scholarship in geology. The senior scholarship in physical science has now fallen to the Otago University on six different occasions, but this is the first time it has been gained by a mining student. It is equally worthy of mention that the scholarship in geology won by Mr. Thomson is the only one that has so far been secured by a student of Otago University. Thus, of four senior scholarships won by Otago University in 1902, two were secured by students of the mining school. Our geological students have especially distinguished themselves in the University examinations, and Dr. Marshall, lecturer in geology, deserves much commendation for his enthusiasm and careful instruction. With the good fortune to obtain students equally devoted to their work, the same satisfactory results may be looked for again in future years.

The economic value of geological science in connection with mining has long been recognised in Germany and the United States of America, where the highest posts in the State departments of mining are filled by accomplished geologists. It is certain that if a mining engineer would rise to the higher branches of his profession he must needs distinguish himself in the domain of geology.

It may not be out of place to mention here that, in addition to the results mentioned above, three mining students—namely, Arthur R. Andrew, J. Allan Thomson, and A. Gadsby Johnson—passed the final examination for the ordinary degree of B.Sc. of the New Zealand University.

Government Examinations under Mining Acts.—Mr. T. Otto Bishop, a late graduate of the school, passed the examination for a first-class mine-manager's certificate, which will be granted on completion of necessary practical work in a mine. The following old students also passed the examination for battery-superintendents' certificates: George S. Orbell, W. Ernest Barron, John Mackay, G. A. C. Ulrich, and G. A. Gow.

Laboratory.—Mr. Waters reported on fifty-one samples of ore — mostly gold determinations— and treated two parcels of ore in the experimental plant. The gold-ores of Otago are mostly clean and free milling, with the result that the experimental plant is seldom used by the public. On the other hand, a small leaching plant is urgently required for the practical demonstration of certain metallurgical processes, and by modifying the present battery on the lines indicated by Mr. Waters such a plant could be constructed at a cost not exceeding £50.

Donations.—The geological collections in the school have been supplemented by a large number of rocks and fossils presented by Dr. Marshall, Mr. Hamilton, and the Director; and during the year Messrs. Smith and Co. (Limited), of Sheffield, forwarded useful exhibits of steel and steel-wire ropes. At present Dr. Marshall is greatly hampered by the want of suitable space in which to set out and exhibit his collections. What is much needed is a room in which the characteristic rocks and fossils of the different rock formations of New Zealand could be exhibited in their chronological order for purposes of class demonstration.

Old Students of Mining School.—Among the more important positions secured by old students of the mining school during 1902 were those of Mr. A. Montgomery, M.A., appointed State Mining Engineer for Western Australia; Mr. F. B. Allen, M.A., B.Sc., Director of Western Australia School of Mines; Mr. O. G. Adams, A.O.S.M., Director of Thames School of Mines; Mr. T. O. Bishop, A.O.S.M., Director of Reefton School of Mines; Mr. W. S. Watt, A.O.S.M., Director of Zeehan School of Mines; Mr. James Maclaren, B.Sc., Special Mining Geologist to Indian Government; Mr. Adam Hay, A.O.S.M., Assistant Engineer to Abyssinia Prospecting Syndicate; and Mr. Norman R. Fisher, B.Sc., M.E., Assistant Surveyor, Dunedin Drainage Board. Besides these, many of our past students have obtained appointments during the year in mining and metallurgical works in New Zealand and Australia.

Conclusion.—I wish, in conclusion, to record my appreciation of the zeal and ability displayed by Mr. Waters and Dr. Marshall in conducting the work of their several departments during the past year.

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EXPENDITURE ON SCHOOLS OF MINES.

The following table shows the expenditure by the Government on schools of mines since their inauguration, exclusive of subsidies paid to the University of Otago towards the School of Mines in connection with that institution:—

Financial Years.	Subsidies towards the Erection of Schools of Mines, and Maintenance.	Chemicals and Apparatus, also Mineralogical Specimens supplied to Schools of Mines.	Scholarships.	Salaries of Teachers, and Travelling-expenses, &c.	Total Sum paid by the Department towards the Schools of Mines.
	£ s. d.	£ s. d.	£	£ s. d.	£ s. d.
1885–86 ...	...	36 19 9	...	1,223 9 10	1,260 9 7
1886–87 ...	257 16 6	409 1 4	...	2,716 9 3	3,383 7 1
1887–88 ...	253 15 9	253 14 1	...	1,714 9 6	2,221 19 4
1888–89 ...	42 10 0	6 12 9	...	1,139 4 1	1,188 6 10
1889–90 ...	142 2 0	181 14 10	...	716 3 10	1,040 0 8
1890–91 ...	217 6 6	54 8 0	...	620 9 9	892 4 3
1891–92 ...	181 14 0	...	...	689 5 9	870 19 9
1892–93 ...	312 3 4	...	...	670 1 0	982 4 4
1893–94 ...	197 0 5	...	...	858 19 4	1,055 19 9
1894–95 ..	390 0 0	45 10 10	...	773 17 8	1,209 8 6
1895–96 ...	820 0 0	...	50	849 3 0	1,719 3 0
1896–97 ...	352 14 11	58 18 6	100	834 12 8	1,346 6 1
1897–98 ...	1,089 18 6	29 19 9	100	780 19 0	2,000 17 3
1898–99 ...	740 15 2	32 19 7	50	729 10 11	1,553 5 8
1899–1900 ...	990 3 4	24 3 8	50	52 16 3	1,117 3 3
1900–1901 ...	866 10 11	56 3 4	98	77 7 10	1,098 2 1
1901–1902 ...	1,155 12 3	63 5 1	49	69 16 4	1,337 13 8
1902–1903 ..	1,379 15 6	134 18 8	158	111 0 0	1,783 14 2
Totals ...	9,389 19 1	1,388 10 2	655	14,627 16 0	26,061 5 3

The above statement shows the amount expended on the different schools of mines throughout the colony; but, in addition to this, the sum of £10,053 6s. 2d. has to be added, as that has been paid to the School of Mines attached to the University of Otago, £750 being paid last year towards maintaining the school, which makes the total expenditure up to the 31st March last to be £36,114 11s. 5d. This expenditure has extended over a period of eighteen years.

GOLD-SAVING ON DREDGES.

By J. P. Smith, M.A.Inst.M.E., Dunedin.

In a paper on the above subject, published in the annual report for 1900, I stated that "among the first improvements that will be made in the gold-saving appliances in use on dredges will be the addition to every dredge of a distributer. The width of the tables will also be increased, especially when the dredge is designed to treat gravels known to contain very fine or scaly gold."

It is interesting to note what improvements have actually been made in gold-saving appliances during the three years that have passed since the above was written. On the Otago goldfields there has been little practical improvement.* The old-fashioned method of making the screen perforations discharge directly upon the head of a set of inclined tables or strakes covered with matting, on each of which is laid a sheet of expanded metal, still prevails. With few exceptions, no attempt has been made to regulate the quantity of pulp passing over the different divisions in the tables, nor does the quantity of water lifted and utilised for washing the gravels bear any proportional relation to the normal quantity of sand passing through the perforations of the screen. So limited is the power available in many dredges that when lifting the maximum quantity of gravels the speed of the engine is decreased to such an extent as to reduce the efficiency of the centrifugal pump, and a smaller quantity of water is available at the time when it is most needed.

During the three years' practice under review the creek and river flats of southern Nelson and Westland have been opened up as dredging fields. About two-thirds of the dredging ground on the West Coast consists of creek and valley deposits, and the balance of littoral deposits. The gold found in the littoral deposits, both recent and alluvial, is in a fine state of division, and, as it occurs with large quantities of magnetite, ilmenite, garnet, and other minerals of high specific gravity, has long exercised the ingenuity of miners and others to obtain a fair extraction when dealt with in quantities. The effect has been a tendency not only to extend the spread of tables, but also to provide distributers and mixing-boxes, so that the pulps passing over each foot in width of the tables shall consist approximately of definite proportions of mineral matter and water. When it was proposed to furnish the first West Coast dredges with the primitive gold-saving appliances in use on the Otago rivers, the Coast miners and those acquainted with the difficulties attending the saving of scaly and fine gold at once condemned the tables as unfit.

* Lee's tables have been adopted on some of the dredges in Southland with most satisfactory results.—J. Hayes.

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As soon as it was realised that gold-dredging on the Coast would become an established industry, the ingenuity of inventors was exercised to design efficient tables that could be erected on the limited space available on the deck of a dredge. The first step in the evolution of the modern table was the introduction of what was known as Jones's patent on the Waipuna, Grey River, and other machines. This was an improvement on the Otago appliances, and consisted of the addition to the ordinary tables of distributers and mixing-wells, the latter being generally known as "boil-boxes." It is only fair to state that at a sluicing claim at Barrytown, where a littoral deposit containing large quantities of black sand and very fine gold was being successfully dealt with, the mixing of the pulp in quantity and its even distribution over the tables had been accomplished long before. To deal with sands in quantity on dry land, where space is of no consequence and the quantity of water available only limited by the means of the operator, is very different from treating large quantities successfully in the available space on the pontoons of a dredge, where the supply of water depends upon the size of the pump or the power of the engine. But when once the principles governing the mixing and distribution of the sands had been learned the evolution of the present tables was rapid. The latest improvements suggested by experience are embodied in Cowan's Pactolus tables and Phillips's black-sand tables, diagrams of which accompany this paper. The former are in use on the Pactolus, Garibaldi, and other dredges, where only a limited deck-space is available, and give every satisfaction. As will be seen in the drawings, the tables are superimposed one over the other, thus making a given area provide space for double the spread. The upper spread of tables is fed from one side of the distributing-box, and the lower from the other side. The method of distributing by fixed partitions in the distributing-box is not so good as with Phillips's doors, which are provided with quadrants and thumb-screws, and are adjustable. As the deck of a dredge and, consequently, the bottom of the distributing-box is seldom absolutely level in cross-section for any length of time when the dredge is working, there must always be a slight variation between the quantity of pulp discharged from one side of the box and the other. Phillips's tables are working on the North Beach dredge, a machine dealing with a littoral deposit of sand and shingle. The gold is very finely divided, and associated with large quantities of black ironsand (magnetite and ilmenite). The sand is saved with the gold, and afterwards separated by amalgamation. If any loss of gold occurs over either Cowan's or Phillips's tables it is not due to any want of efficiency of the tables, but from the failure of the pump to lift the quantity of water required to keep the strakes free from gravel, and this will always be liable to occur so long as a separate engine is not provided to drive the pump alone. As the quantity of sand passed over the tables is governed by the size of the perforations in the screen, and there are no other means by which it can be regulated, there will always be a varying quantity of solid matter in the pulp. No two cubic yards of gravel in a working-face can be relied upon to contain equal quantities of fine material of less than 1 in. in diameter, the size of the largest perforations in many screens. Where the ground consists of alternate layers of sand and shingle, the quantity of fine material varies with nearly every bucket discharged. In creek beds and flats there are occasional deposits of fine drift resting directly on the auriferous wash and lifted with it, which for a time largely increases the quantity of solid matter passing over the tables. When dredging through ground of this loose nature the tendency is for the face to fall in freely to the buckets, with the result that the whole of the buckets come up full and sometimes piled up. Now, material of this description packs closer in the buckets, and consequently the weight of the ladder is largely increased. On a machine where the engine under normal conditions is working at its maximum efficiency, which is often the case, the additional load at once reduces the speed. The lifting-capacity of a centrifugal pump varies with the number of revolutions it makes within certain limits, so that the effect of the reduced speed is a diminished supply of water just at the moment when the largest quantity of solid matter is passing over the tables. If gold is lost over the Pactolus or Phillips tables, it is under these abnormal but frequently occurring conditions, and no tables will ever be designed to prevent this loss until the pump is driven by a separate engine instead of by a belt from the main engine.

With the few Otago dredges on which any attempt has been made to improve the gold-saving appliances it has been by the adoption of West Coast methods and tables. A serious difficulty in the way of improvement is the reluctance of the dredgemasters to admit that gold is being lost, believing that such admission would be a reflection on their own efficiency rather than that of the appliances with which they are supplied. Mr. E. Roberts, who designed many of the Otago and West Coast dredges, having recently satisfied himself that the old-fashioned tables do not save the gold, has designed a set of tables for Roberts's Naumai dredge which are a modification of both the Phillips and Pactolus tables. Sufficient space being available, the tables are not doubled, but spread on both sides of the distributing-box; the distributing is effected with adjustable doors, as on the Phillips tables; whilst the mixing and spreading wells, or "boil-boxes," are after the Pactolus pattern.

As the difference in first cost between the old style of table and those fitted with distributers is merely nominal, the question of expense can never be pleaded as an excuse for shortsighted conservatism.

HIGH-LIFT CENTRIFUGAL PUMPS FOR MINING PURPOSES.

The problem of raising large quantities of water against a considerable head is one which has occupied the attention of hydraulic and mining engineers for many years, and which has demanded all their available skill and energy in order to arrive at a practical solution.

The difficulty with mine-pumps lies in the intermittent acceleration of heavy columns of water, when the shock due to the reversal of even slowly moving plungers tells most severely on the

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whole pumping system, and causes continual wear-and-tear even where the best material and workmanship have been available for the construction.

Where the head is low—say, not exceeding 50 ft.—the ordinary type of centrifugal pump has met with great success, but it is handicapped by its very low efficiency, such pumps seldom realising much over 50 per cent.

In quite recent years several fast-running plunger pumps, of what may be called the "express" type, have been put on the market, and have certainly achieved remarkable results when compared with the older forms of either direct-acting or geared pumps. Their principal feature is the use of mechanically controlled valves of special construction, permitting a high plunger-velocity; but even they are subject to the usual wear-and-tear of internal parts, such as rams, valves, seatings, and controlling levers, and of the external rod ends and gearing, which is, of course, aggravated when muddy or gritty water has to be dealt with.

In order to avoid the drawbacks to which all plunger pumps are liable, and also to get over the disability of the rotary pump for high lifts, the multiple chamber centrifugal pump—known as the "Mather-Reynolds Patent High-lift Pump"—was introduced some years ago. This was able to discharge water against heads with which the ordinary centrifugal pump could not deal.

The feature of this pump is that it consists of one or more sets of vanes, or impellers, each set running in its own chamber, but upon a common shaft, the delivery-pressure of the liquid varying directly as the number of chambers used. Thus, if an ordinary single pump can deliver water against a head of 60 ft., the addition of another chamber will give a final delivery-head of 60 ft., while four chambers will enable the pump to discharge the same amount of water against a head of 120 ft. With this multiple pump it was found possible to deliver large quantities of water to a height of as much as 150 ft., a result never before attained by a centrifugal pump.

The centrifugal pump has been further developed by Messrs. Sulzer Bros., with whom Messrs. Mather and Platt (Limited) have made arrangements for the adoption of their latest improvements. With these improved pumps water can be delivered against as great a head as 200 ft. with a single chamber, and at a high efficiency, some of the larger sizes of pumps giving out the equivalent of as much as 76 per cent. of the power put into them.

In this improved patented type of circulating pump the water enters the revolving wheel axially, and in the case of single pumps symmetrically on each side of the wheel, so that axial thrust is eliminated, the water then traverses the curved internal passages between the vanes, and is discharged tangentially at the periphery into a stationary guide ring of special construction; this conveys it to the annular chamber in the body of the pump, where the velocity-head imparted to the water by the wheel is converted into pressure-head. From this chamber the water is finally discharged into the pipe-lines, or, if the pump be a multiple one, into the second and subsequent chambers.

A special feature of this pump is the provision of the stationary guide ring mentioned above: this is fixed concentric with the revolving vanes, and, owing to its design, enables the conversion of velocity into pressure head to be carried out in a much more perfect manner than is possible in the case of any other centrifugal pump; thus not only is the possible height of lift very greatly increased, but also the efficiency of the pump is materially improved.

Another point of interest is that in these pumps the water is nowhere forced to undergo a sudden change of direction, or to meet with a sudden difference of cross-section in the passages.

The whole internal design is carried out in suitable curves and channels of gradually increasing area, so that the liquid dealt with is never restricted or opposed in its course through the pump.

It is claimed that this is an advantage of no little value. As to other advantages, when compared with a plunger pump for high lifts, a glance at the two types will make these manifest, as follows: (1.) The centrifugal pump has no moving parts in contact, except the steel spindle revolving in its ample and well-lubricated bearings; wear-and-tear must therefore of necessity be a minimum. (2.) The pump has no need of air-vessels, and since it runs at a high speed of rotation it can be designed so as to occupy a small space. (3.) Heavy foundations are entirely unnecessary; large pumps have been run at full load on wooden balks without any fixing whatever. (4.) Owing to the speed of rotation the pump can be coupled direct to the spindle of an electric motor or steam or water turbine, thus obviating the necessity for the introduction of gearing.

The pumps may, of course, be driven from steam or gas engines or existing shafting by means of belt or ropes; but the ideal source of power is the direct-coupled electric motor.

To convey an idea of the value of this class of pump for mining purposes, the experiences of the owners of a silver-mine in Spain may be briefly recapitulated. The original plant consisted of a Cornish pumping-engine with single-acting plungers 10 in. in diameter by a stroke of 6 ft. 6 in. There were seven plunger-sets and one draw-lift, the total height of the column being 1,200 ft. Owing to the cost of fuel for steaming this pump something more economical was decided on, and a new compound engine for driving and a set of differential pumps, having plungers 15¾ in. and 22 in. diameter by 5 ft. stroke, were ordered. Pending the construction and erection of this plant a steam-pump was placed underground. The results obtained from this, and also from the differential pumps (when installed), were so unsatisfactory, by reason of expensive working and frequent breakages, that both were abandoned and replaced by hydraulic-ram-pumps, the rams at the surface being coupled direct to the tail-rods of new horizontal engines.

This plant fulfilled its purpose for a year or two, but, owing to the enormous shock due to the movement of the columns of water at each reversal of the stroke, serious trouble was experienced by the breakage of the hydraulic mains, and the necessity for the adoption of a more satisfactory method of pumping became manifest.

After careful investigation the high-lift centrifugal pump was decided upon. The engines which formerly worked the hydraulic rams now drive dynamos for the generation of electric

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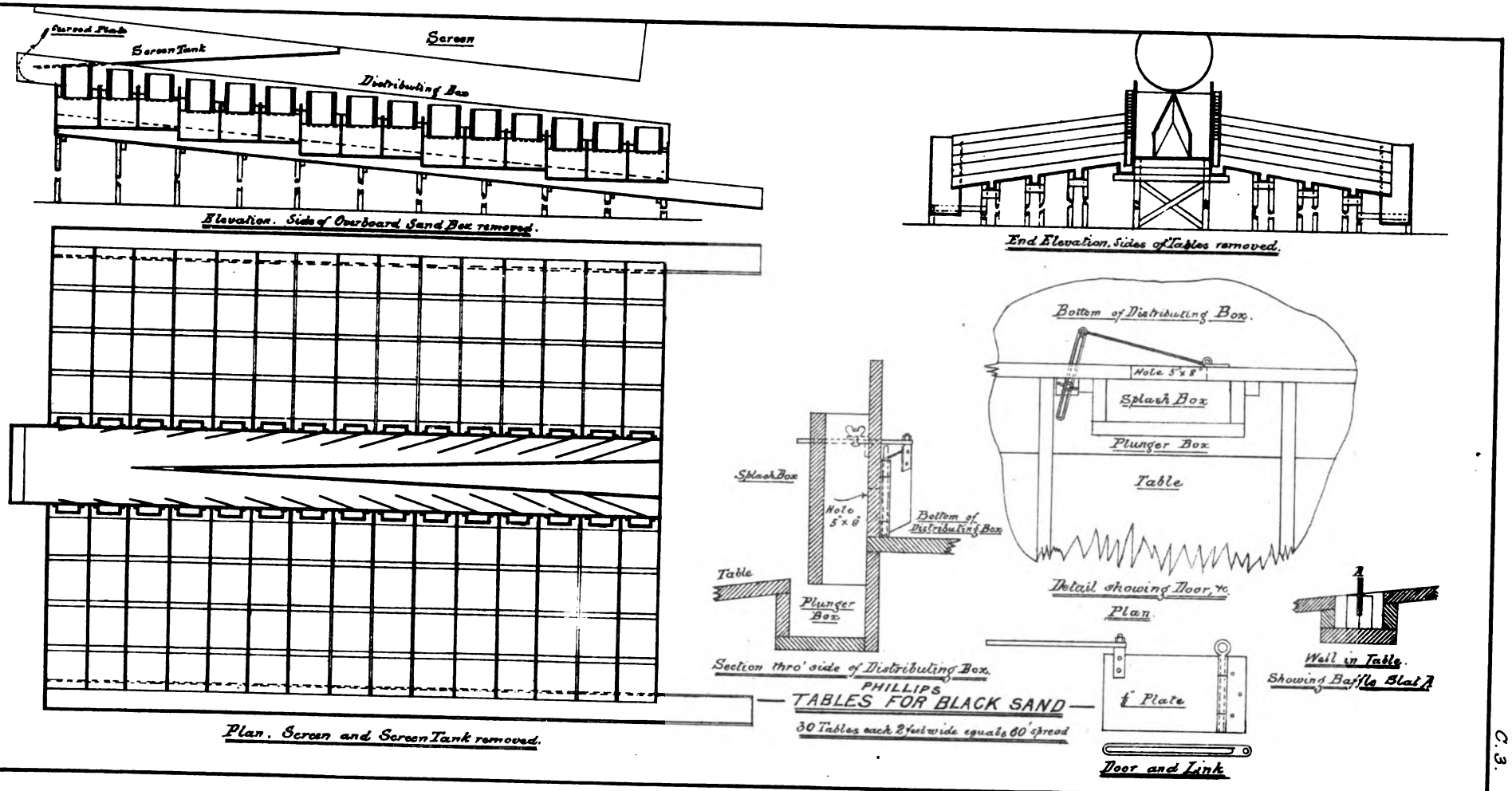

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TABLES.

Scale.

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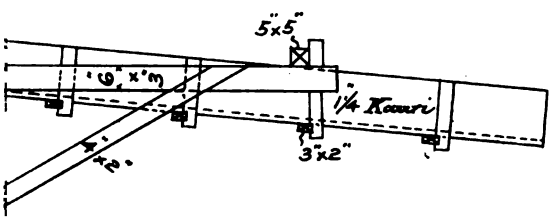

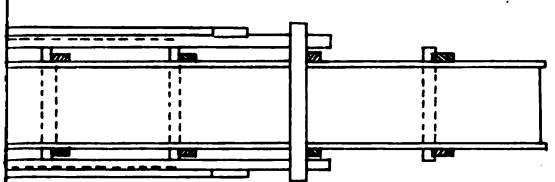

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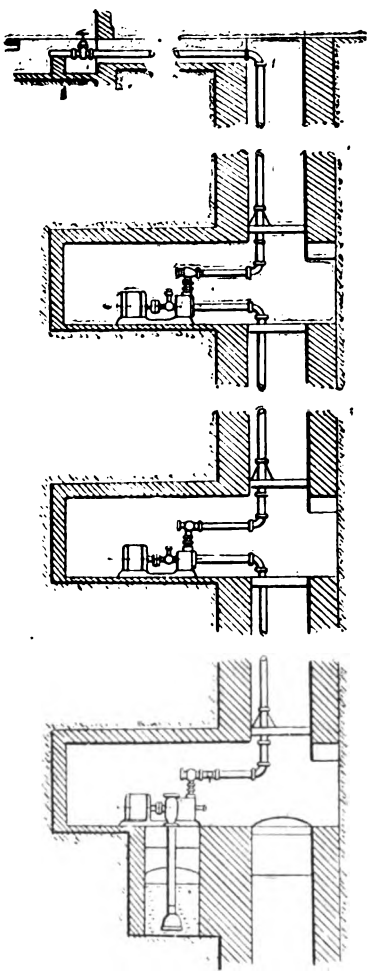
current, and the pumps, with electric motors combined, are placed in chambers down the shaft as shown in the sectional sketch. The lowest pump draws its water out of the sump and discharges directly into its delivery-pipe, which is connected with the suction end of a second (or middle) pump 500 ft. higher up the shaft, no lodgment for the water being necessary. The middle pump in like manner delivers directly into the third or top pump. By this means the column of water is entirely unbroken and constantly flowing steadily onward.

These pumps have been working for nearly five years, delivering about 1,000 gallons per minute against a total head of nearly 1,500 ft. To those whose experience is chiefly confined to the single-acting bucket and plunger pumps it may be pointed out that the quantity named is approximately that which would be raised by a 22 in. set, having a stroke of 10 ft. and working six strokes per minute.



Sectional Sketch of High-lift Centrifugal Pumps in series.

The results given by the plant just named are said to be highly satisfactory not only as regards immunity from frequent breakdowns and their consequent stoppages, with the resultant heavy bills for repairs, &c., but also in coal-consumption, a saving of from 15 to 20 per cent. being effected as compared with the consumption required for the best of the former installations.

The cost of maintenance appears to be very light; the pumps are opened out and cleaned about three times a year, the work occupying about four hours on each occasion. The engineer in charge reports that "there is, happily, no sign at all of wear from unclean water in any working-part of the pumps where one was quite prepared to find it. Their durability makes them compare most favourably with plunger pumps, the valves of which constantly require repair and renewal. The consumption of lubricating-oil is negligible, the machines are small, and their installation underground as simple as possible."

As a recent example, reference may be made to the installation of a combined pump and motor at a coal-mine in Scotland. This pump was constructed to deliver 400 gallons per minute against a total head of 250 ft. when running at a velocity of 850 revolutions per minute. The volume named is equal to the capacity of an ordinary single-acting mine-pump of 15 in. diameter, with a stroke of 7½ ft. and making seven strokes per minute. Such a pump and motor as that just described would occupy a ground-space of 10 ft. 3 in. by 3 ft. 6 in., the height being under 4 ft., the weight 4½ tons, and the cost in England about £400.* This is, of course, exclusive of engine, dynamo, and connections; but the small space occupied, absence of pump-rods, suitability for raising dirty water, and the simplicity as well as the very moderate cost of these pumps are features which cannot fail to command attention.

I have to thank Messrs. Palmer and Co., engineers, Wellington, for the information which has enabled me to give the forgoing description.

* The cost of a belt-driven pump of the same capacity is about £120 less.

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SHAFT-LININGS.*

The subject of shaft-linings is one which has received little attention from the authors of papers, &c., the only references to it being, with a few exceptions, short paragraphs incorporated in papers dealing with the sinking of shafts, which are scattered throughout many volumes, and cannot be referred to without enormous labour. For this reason it is hoped that the following article, in which an attempt has been made to collect together some account of the different types of lining which have been employed, may be of use to those interested in the subject.

Shafts may be lined with timber, masonry, iron, or concrete, and, in addition to these used alone, combinations of timber and iron, masonry and iron, and iron and concrete have been employed. The selection of the material with which to line a shaft depends to a great extent on its cost, but in considering this it must be remembered that a small initial outlay does not necessarily result in saving, for the questions of repairs, safety, &c., affect the subject, and must be carefully considered before making a final decision. Timber is perhaps the cheapest material as regards first cost, but it has the serious disadvantage that maintenance charges are liable to be high owing to the wood decaying, and it is further subject to grave danger from fire, while it is not altogether satisfactory in water-bearing ground. For a shaft which constitutes the main highway to a mine—which therefore by its failure would not only stop the whole work of the mine, but might also cause great loss of life—timber should not be employed unless its use is absolutely unavoidable, for the greater safety and permanency of other materials will justify considerable additional first cost. Up to the present time—in this country, at any rate—masonry has been most often employed under ordinary circumstances, its safety and the small cost of maintenance, combined with the fact that it is much cheaper than iron, having led to its use even where considerable quantities of water have been encountered. Where, however, water is met with in excessive quantities, cast-iron tubbing is almost the only form of lining which it has so far been possible to use with advantage. Concrete lining has not hitherto been employed to any great extent, but the recent introduction of several fresh methods of applying it may be expected to lead to a wider utilisation of this material.

Timber shafts are generally rectangular in plan, and the commonest form of timbering consists of a number of rectangular frames of square timber spaced at equal distances apart vertically by means of distance-pieces, the earth being held up by close planking placed behind these frames. The frames or "sets" are formed of four beams, the two longer ones known as wall-plates and the shorter ones as end-pieces, and are joined either by halving the timber at each end or by some more complex joint. The distance-pieces, known as studdles, are placed perpendicularly between the different frames. The end-pieces are some of them made long enough to project beyond the wall-plates, the ends being imbedded in the ground and serving to support the lining, or the same effect is sometimes obtained by putting in bearers considerably longer than the end-pieces at regular intervals, the end-pieces being supported by these bearers. The distance between the frames must be regulated by the nature of the ground—in fact, if the ground is very bad they are placed quite close together, the studdles being done away with, while in good ground they may be 4 ft. or 5 ft. apart. During excavation the bottom unsupported frames are held in position by strong iron clamps until a length of 10 ft. or 12 ft. is completed, when vertical planks, which stretch over several frames and so bind them firmly together, are nailed on the inside. Partitions for separating the hoisting, pumping, and other compartments of the shaft are formed by putting timbers across the shaft parallel to the end-pieces. These timbers also serve the useful purpose of strengthening the framing considerably. Some of the shafts of the Comstock lode provide good examples of this form of timber lining.

In some districts round timber is used for shaft-lining, the general method being very similar to that described above, but the end-pieces and wall-plates are not halved together. In order to resist heavy pressure some additional timbering is put in within the frames. This consists of frameworks of round timber placed at the ends and in the centre of the shaft, each frame being formed of two vertical pieces about 20 ft. long, held apart by diagonal struts. Timber lining may take various other forms according as the shafts vary in shape; thus circular shafts are sometimes ined with timber, and at Clausthal there is an instance of a decagonal timbered shaft; but, whatever the shape of the shaft, the principle of lining is always the same under ordinary circumstances —that is to say, the lining always consists of planking to support the earth, the planking being held in place by strong frames placed at intervals in the shaft.

In watery strata it becomes necessary to make the shaft-lining as nearly watertight as possible

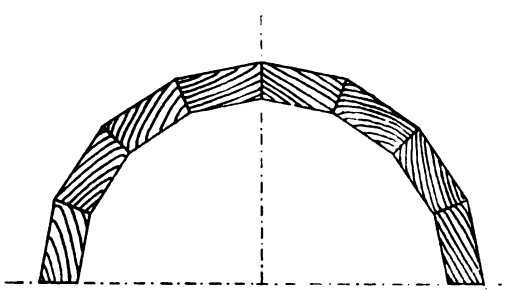

Fig 1.

Timber Tubbing.

* From the *Colliery Guardian* (London).

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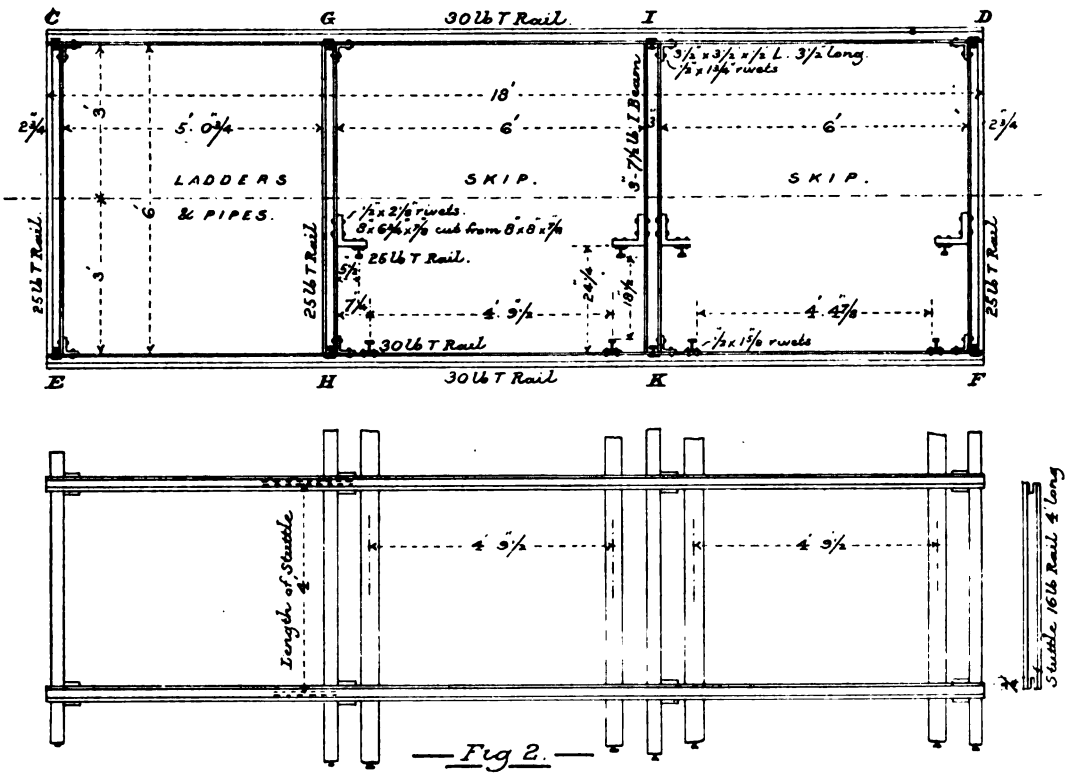

Shaft supported by Steel Framework.

in order to avoid the necessity of pumping. Timber tubbing for this purpose may be either plank tubbing or solid wood tubbing. Plank tubbing does not differ essentially from ordinary timber lining, except that shafts so treated are generally made circular. Watertightness is secured by bevelling the edges of the planks so as to insure a good joint, and nailing them around the circular frame like the staves of a barrel. Solid timber tubbing consists of carefully shaped blocks of wood fitted together as shown in Fig. 1. Stauchness is secured by placing thin sheets of deal between the joints, which are wedged up as tightly as possible.

For some shafts a combination of iron or steel frames with timber planks has been employed; thus at Boryslaw is a circular shaft lined with timber in which each frame consists of two semi-circular rings of channel iron which are connected together by channel fishplates and bolts to form a complete circle. In this case the studdles are of timber.

The Oliver Iron-mining Company, in lining B shaft of their Pioneer Mine at Ely, Minnesota, have recently made use of the steel framework for a rectangular shaft. This lining is arranged in just the same way as ordinary timbering, only the frames are built up of steel rails, and the studdles are also of steel.

A plan and elevation of these frames is shown in Fig. 2. The wall-plates CD, EF are of 30 lb. rail, the end-pieces and the dividing-piece GH are of 25 lb. rail, and the dividing-piece KI is of 3 in. 7½ lb. I beam, this form being chosen on account of its convenient shape for that position. Beams could, of course, be used instead of rails for all the members of the frame, but it is stated that rails are more economical under conditions requiring a weight of less than 50 lb. per yard. As will be seen from the drawing, the different members are connected together by means of 3½ in. by 3½ in. by ½ in. angle cleats fastened with ½ in. rivets. The studdles are pieces of rail 4 ft. long, slotted at each end to fit on the flanges of the rails forming the frame. Sixteen-pound rails are used for studdles if bought for the purpose, but short lengths of old rails of almost any section can be employed.

In this particular shaft, which, it should be stated, was an inclined shaft, the ground was so good that little lagging was needed in the upper portions; but to prevent large portions of rock falling old wire ropes were stretched longitudinally behind the frames at 5 in. centres. Where the ground became worse ordinary 2 in. planking was employed. This planking, of course, destroyed to some extent the advantage of steel framing with regard to immunity from fire, but in order to minimise this disadvantage it has been proposed to put one 16 ft. length of metal lagging in every 100 ft. of depth. Corrugated-steel and buckled plates have been suggested as most suitable for this purpose. The weight of the lining is taken by bearers consisting of 30 lb. rails placed at intervals beneath the end-pieces and dividing-pieces. In order to give these bearers a good footing in the ground their ends are carried in cast-iron bearing-pieces. The frames are given a firm support on the bearers by means of cast-iron chairs of special form. A complete account of the lining of this shaft and of the proposed similar lining of a larger vertical shaft was given in a paper read before the Minnesota meeting of the Lake Superior Mining Institute, August, 1902.

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Circular shafts in ground which does not contain an excessive amount of water are generally lined with brickwork or masonry, which may be dry or set in mortar, according to circumstances, and is made of sufficient thickness to withstand any pressure likely to be brought on it. Shafts lined in this way are generally timbered temporarily until a suitable place is reached for a foundation. When this point is reached a bed is prepared for the foundation, and a curb of timber or cast iron is laid on this bed to form a level seating for the brickwork, which is built upon it to the top of the shaft. Excavation is then continued, leaving a bench of rock to support the lining until another suitable foundation is reached, when a fresh curb is put in, and brickwork is carried up on it until the previous length is reached, the bench of rock being removed in small sections and replaced by brickwork. If small quantities of water are likely to find their way into the shaft, garland curbs are used—that is to say, curbs which project from the brickwork and form annular gutters which intercept water running down the sides of the shaft, the water being taken away from the curb by a pipe leading to a tank or lodgment. If the ground is not sufficiently strong to support the different sections of brickwork or benches, the lining may be suspended by iron rods from a strong frame on the surface until a firm foundation is reached.

If large quantities of water are met with a brickwork lining takes the form of "coffering"—that is to say, a brick and cement walling backed with puddled clay. In a shaft at the Plas Power Colliery, near Wrexham, North Wales, the pit was lined with a 9-in. dry-brick wall on wooden curbs as excavation was proceeded with until a suitable foundation for the coffering was reached. At this point a cast-iron wedging-curb was put in on which to carry up the coffering. This wedging-curb consists of a flat hollow cast-iron ring formed of two plates connected together by vertical webs, and made in segments of a convenient size. Thin sheets of wood are put in between the segments, and wedges are driven in between the back of the curb and the ground until there is no room for any more. Then holes are made in this wood packing by means of iron spikes, and as many hard-wood wedges as possible are put in. Sometimes two or three of these wedging-curbs are used, one on top of another. At the Plas Power Colliery, when the wedging-curb was put in, three courses of brickwork set in Roman cement were built up on the curb and the wedges behind it, wooden plugs with holes through them being put in at intervals to let out the water from behind, and vertical wooden pipes, perforated every 3 in. down their length, were put in against the dry-brick wall to lead the water to these plug-blocks. The coffering, a section through which is shown in Fig. 3, consisted of three rings of brickwork, and was laid in hydraulic lime. At every three courses bricklaying was stopped while puddled clay was put in between the

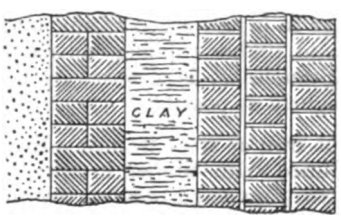

Fig 3.

Section of "Coffering."

coffering and the dry-brick walling, the holes in the wooden pipes being plugged as the clay rose. The two outer rings of bricks were first laid, leaving a space between them of 5½ in. The third ring was placed centrally in this space, and hydraulic-lime grout was run into the spaces, so that the central ring of bricks had a continuous sheet of hydraulic lime on each side of it. When the coffering had risen so high that water ceased to accumulate behind it, the wooden pipes were filled in with stones, and hydraulic lime was run in. The coffering was then completed, and the holes in the plug-blocks were filled in with wedges. In the coffering of No. 2 pit at Llanbradach, South Wales, there was no outer wall of dry brick, the coffering consisting of eight rings of brick, all breaking joint vertically, except the two inner ones. The whole was set in cement mortar, and was backed with cement instead of puddled clay. Coffering has this advantage as compared with cast-iron tubbing, that it is much cheaper; but at the same time it is subject to the disadvantages that it requires much greater care in construction, and cannot be easily repaired.

Cast-iron tubbing consists of rings of cast-iron segments, smooth inside, but with external flanges and stiffening ribs, as shown in Fig. 4. The segments are usually 1 ft. to 3 ft. high and about 4 ft. long, and are provided with a hole in the centre to permit the escape of water until the lining is complete. The foundation consists of one or more cast-iron wedging-curbs, and the tubbing is built up on these ring by ring, thin pieces of deal being placed between the joints. Such tubbing is frequently built up in short lengths with wedging-curbs between them, and as soon as a length is completed the joints are all tightly wedged and the central hole plugged, thus—

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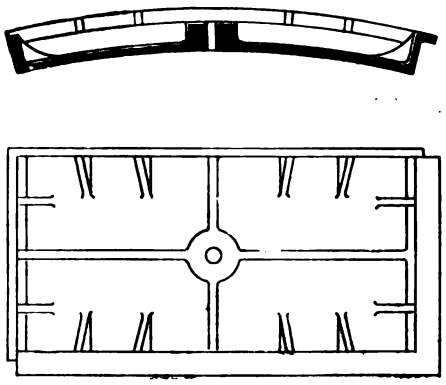


Fig 4.

Cast-iron Tubbing.

making an absolutely watertight lining. If it is necessary to take special precautions to insure staunchness the rings may be built up on the surface and faced in a lathe before erecting them in the shaft. In some parts of France the segments of tubbing are made as much as 5 ft. in height, and the joints are packed with sheets of lead instead of wood.

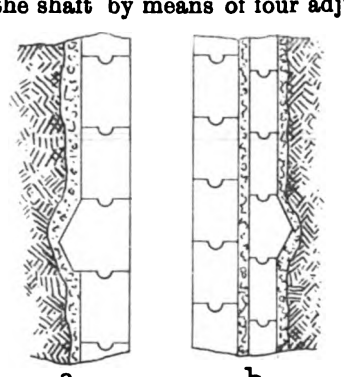
For some special processes of shaft-sinking it would not be possible to make use of tubbing with external flanges, so that in these cases internal flanges must be employed, and the different rings are bolted together. Spaces behind the tubbing should always be filled in with either concrete or clay.

An interesting system of lining due to Mr. Pattberg was made use of at the Rhein-Preussen Colliery. This method, known as compound lining, consists of cast-iron tubbing, about 2 in. thick, having its joints packed with asbestos, and lined inside with brickwork. At intervals down the shaft, at distances apart varying with the height of the column, annular iron rings of width equal to the thickness of the brickwork were bolted on to the inside of the tubbing, and served to divide up the masonry into lengths. These rings were tied together by longitudinal iron rods extending throughout the depth of the shaft, with the object of giving the lining great rigidity in spite of the small thickness of the tubbing, an object which the brickwork also tends to gain. This shaft was sunk by the Pattsberg process, and it was hoped that the great weight of the lining would make it possible to sink to a greater depth without reducing the diameter of the shaft than would be the case with ordinary tubbing, but this end was not realised.

Coming now to concrete, we may divide linings of this material into three classes—concrete tubbing, monolithic concrete, and armoured or reinforced concrete.

Concrete tubbing-blocks have been employed to some extent in Germany, where they take the form of segmental blocks of concrete fluted or grooved at the top and sides, and provided underneath with a projection to fit in the top groove of the blocks below. Sections showing two methods of applying these blocks are given in Fig. 5. In all cases the blocks are set in cement, and in the double wall shown in the figure the space between the two rings is also filled with cement. As these blocks are rather heavy, means are provided for lifting them by forming a vertical hole through them and a horizontal hole to intersect the vertical one. A ring bolt is inserted in the vertical hole, and is held in by a cotter inserted through the horizontal hole. When the block is in place the holes are filled up with cement.

The Foxdale Lead-mine, in the Isle of Man, presents an example of a monolithic concrete lining, this particular shaft being rectangular; and another example, a circular shaft, is at Ougrée, in Belgium, the lining in this case being much thinner than would have been necessary if brickwork had been employed. Lining of this kind may be put in by means of ordinary timber shuttering, but a more convenient method would seem to be M. Badiou's "cintre mobile," which was employed at the Conte-Grandchamps shaft at the Chapelle-sous-Dun Colliery. This apparatus consists of a shallow cylinder carrying a working platform, the whole being suspended by chains from the surface. The external diameter of the cylinder is made equal to the inside diameter of the shaft, so that its sides act as shuttering; the concrete is put in in lengths, and the cintre mobile is raised as required by winding up the suspending chains, a special device being employed to release the apparatus from the grip of the finished length. The level of the platform is adjusted from the surface by means of the chains, and the apparatus is centred in the shaft by means of four adjustable arms which are inserted in



a Fig 5. b

Concrete Tubbing.

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holes left in the finished length of concrete, these holes being afterwards filled up. The depth of the cylinder was 3 ft. 6 in., and the concrete was put in in lengths of 3 ft. 3 in. The apparatus is provided with openings through the platform, so that excavating can be continued below while the upper lengths are being lined. The levelling of the apparatus was rather troublesome, but at the Saint-Etienne Colliery of the Société de l'Industrie Minérale this was made easier by an arrangement which permitted the men on the platform to adjust its level themselves.

Concrete linings of this type are strong and fairly watertight, while they are said to cost on the average only about half as much as a brickwork lining. As an example of what may be done with concrete, which by some is not considered a very promising material, it may be mentioned that at the Charbonnage de Bonne Espérance a shaft was sunk in watery strata with a descending cylinder of concrete, shod with cast iron, and, contrary to the expectations of the engineers, this cylinder showed no signs of failure or cracking. This shaft was timbered temporarily, and finished with a monolithic lining of concrete.

Armoured concrete does not appear to have been used for any important shafts, but a number of small square shafts of diameters from 6 ft. to 14 ft., and depths ranging from 22 ft. to 31 ft., were sunk for the foundations of the Berne Municipal Theatre, and lined in this manner. A diagrammatic plan and section of the lining of these shafts is shown in Fig. 6, in which the armouring is represented by broken lines, and consisted, as will be seen, of horizontal round iron wires, 12 mm.

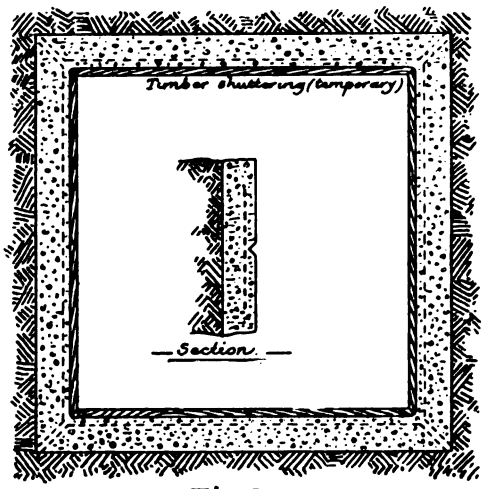

Fig 6.

Armoured Concrete Shaft-lining.

diameter, spaced a small distance apart. The concrete was put in in lengths of 90 cm. (35 in.), and adjacent lengths were tied together by vertical wires 35 cm. (14 in.) long, and hooked at their ends. While the concrete of one length was setting the next length below was excavated. The thickness of this lining was only 15 cm. (6 in.), and it was so light that the friction of the earth against its sides was sufficient to support it while the lower lengths were being excavated. It may perhaps be remarked here that from its extended and successful application on the Continent as a material of construction for a large variety of purposes, armoured or reinforced concrete would seem to merit greater attention than it has hitherto received at the hands of English engineers.

In the appendix which follows will be found—(*a*) the annual reports of the Inspectors of Mines, Wardens, Managers of Government water-races, and that of the Engineer for Water-conservation; (*b*) the questions used at the last examinations of candidates for certificates of competency as mine-managers and battery-superintendents; (*c*) a list of persons to whom certificates as mine-managers, battery-superintendents, and dredgemasters have been issued; and (*d*) the usual statistical returns.

I have, &c.,

JOHN HAYES,
Inspecting Engineer.

The Hon. the Minister of Mines, Wellington.

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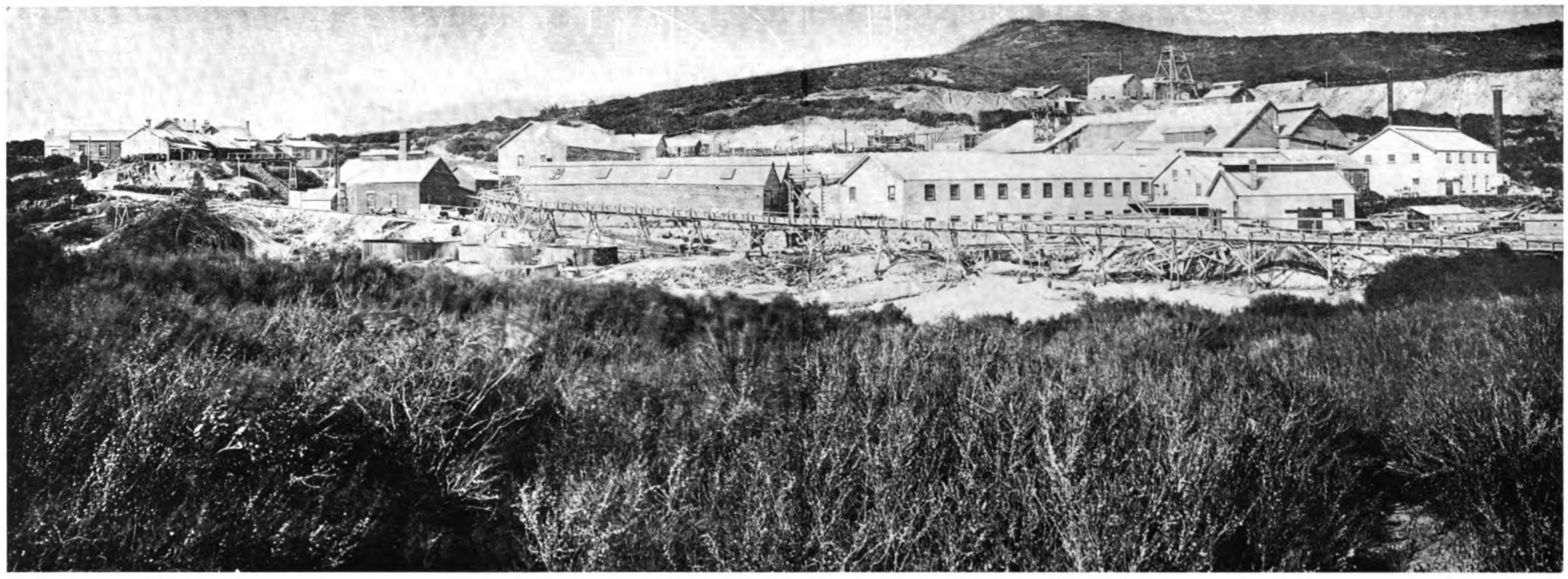

Face p. 68.] General View of Waihi Gold-mining Company's 90-stamp Mill and Cyanide Plant, Waihi C.—3.

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APPENDIX.

REPORTS OF INSPECTORS OF MINES.

Mr. James Coutts, Inspector of Mines, Thames, to the Under-Secretary, Mines Department, Wellington.

Sir,— Inspector of Mines' Office, Thames, 21st March, 1903.

I have the honour to furnish herewith the returns and report on the gold-mining industry in the Hauraki district for the year ended 31st December, 1902.

No new or important discoveries have been made, but the gold returns show a considerable increase compared with the previous year, not only at Upper Thames, but also at Thames and Coromandel. Should no unforeseen drawbacks occur, the output of bullion from the Waihi Company's mine will be considerably increased during the next twelve months, as this company has now 330 stamps employed, all the dry crushing with stamps having been converted to the wet-crushing process, and with exceedingly satisfactory results. The dry crushing, which had a very injurious effect on the men employed in the mills where it was carried on, has now been completely done away with in this district.

Waihi District.

Waihi Gold-mining Company (Limited).—No. 6 Level.—Crosscuts: No. 2 shaft crosscut has advanced 300 ft., making a total of 604 ft. from No. 2 shaft. From 273 ft. to 353 ft. is in quartz, the north section of the Martha lode. The country-rock near the Martha lode is a medium-hard, partly decomposed andesite. At the face it is a hard undecomposed andesite. No. 2 shaft, south-east crosscut, has been extended 292 ft., making a total of 473 ft. from No. 2 shaft, and the following leaders and lodes were intersected: At 204 ft., a 6 in. leader; at 232 ft., 12 in. leader; at 267 ft., 6 in. leader; at 283 ft., lode 2 ft. wide; at 329 ft., 9 in. leader; at 360 ft., lode 2 ft. 6 in. wide; and at 366 ft., a lode 2 ft. wide. These last two lodes junction on the west side of crosscut, and correspond to I lode. At 409 ft. in, quartz with country-rock mixed, 9 in. wide, corresponds to J lode; at 455 ft. in, leader 21 in. wide; and at 472 ft. in, leader 9 in. wide. No. 2 shaft, west crosscut: This has been extended 42 ft. 6 in., making a total of 107 ft. 6 in. from shaft. At 91½ ft. in, the north section of the Welcome lode is met, and is 16 ft. wide. No. 1 shaft, north-west crosscut: This has been driven this year a total length of 139 ft. At 37 ft. in, quartz was met, and is 81 ft. wide. This comprises for the first 10 ft. the Magazine lode, then for 19 ft. Regina lode, and the remainder the Martha lode. No. 4 shaft, south-east crosscut, was driven a total distance of 71 ft. from No. 4 shaft. At 20 ft. from No. 4 shaft the division-line between the recent andesite country and the older reef-bearing andesite country is clearly seen. At 28 ft. in, there is quartz about 3 ft. wide; and at 41 ft. in, the Empire lode is met, and is 15 ft. wide. Martha lode, south section: At 252 ft. in No. 2 shaft, north-west crosscut, a level was started and driven east to No. 1 shaft, a length of 495 ft., and 393 ft. east of No. 1 shaft, making a total length of 888 ft.

Crosscuts through Martha lode: West of No. 2 shaft 130 ft., full width not proved; north of No. 2 shaft, north-west crosscut, full width 157 ft.; east of No. 2 shaft, north-west crosscut, 70 ft., full width 62 ft.; east of 131 ft., not all crosscut; east of 172 ft., full width 62 ft.; east of 222 ft., full width 62 ft.; east of 287 ft., full width 70 ft.; west of No. 1 shaft 100 ft., full width 58 ft.; at No. 1 shaft, north-west crosscut, full width 52 ft.; 119 ft. east of No. 1 shaft crosscut, full width 76 ft.; 248 ft. east of crosscut, full width 88 ft.; 389 ft. east of crosscut, full width 50 ft. North section: There were three drives opened on this section from the No. 2 shaft, north-west crosscut — the first at 278 ft. in from No. 2 shaft, the second and main one at 321 ft. in, and the third one at 345 ft. On the first one 76 ft. was driven east and 5 ft. west of No. 2 shaft, north-west crosscut. On the second one 138 ft. has been driven west of No. 2 shaft, 502 ft. between the Nos. 1 and 2 shafts, and 515 ft. east of No. 1 shaft, making a total length of 1,155 ft. This level has been driven mostly in sulphide ore in the north wall. At west end a crosscut was run in 12 ft. north-west and 61 ft. south. On the third one 83 ft. of driving has been done west and 43 ft. east where the drive follows a small lode that branches off northwards. Welcome lode, south section: The level west of No. 2 shaft, west crosscut, has advanced 329½ ft., making a total west of 344½ ft.; the average width of lode is 11 ft. Distance west 51 ft.; full width, 10 ft.; distance west 105 ft., full width 9 ft.; distance west 171 ft.; full width 11½ ft.; distance west 229 ft., full width 12 ft.; distance west 290 ft.; full width 15 ft.; distance west 340 ft., full width 11 ft. At 120 ft. west the Empire lode joins into the Welcome lode, east of No. 2 shaft. North-west crosscut has been driven on for a total length of 118 ft., width not known, up to 78 ft. east, where lode is 2½ ft. wide at face, and the north wall is only seen. Regina lode: A total of 383 ft. has been driven on this lode—*i.e.*, 204 ft. west of No. 1 shaft, north-west crosscut, and 119 ft. east of same. This lode junctions with Martha lode between No. 1 shaft crosscut and a point 100 ft. west of same. The sulphide ore associated with this lode runs along the hanging-wall side of Martha lode to 119 ft. east of No. 1 shaft. Magazine lode: The level was advanced for 409 ft., making a total length of 590 ft. from No. 2 shaft, north-west crosscut. This lode strikes Regina lode 120 ft. west of No. 1 shaft, north-west crosscut, and then runs eastward parallel with it. The general character of the lode is loose and open, the cavities containing much manganese-dioxide, and carries much of the mine-water. The lode varies from 6 in. to 10 ft. Empire lode: 926 ft. have been driven on this lode during the year, making a total length opened up on the reef of

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1,011 ft. The west end of lode joins Welcome lode, south section, at 174 ft. west of No. 2 shaft, south-east crosscut. From No. 2 shaft, south-east crosscut, to No. 4 shaft, south-east crosscut, there is 5 ft. of the lode exposed, with no walls seen. The average width of the lode is 17¾ ft.

No. 5 Level.—Crosscuts: No. 2 shaft, north-west crosscut, has been extended 73½ ft., making a total of 352 ft. from No. 2 shaft. From 278½ ft. to 311½ ft. from No. 2 shaft is quartz (of which the last 9 ft. is sulphide ore); from 311½ ft. to 316 ft. is blue country; and from 316 ft. to 335 ft. is sulphide ore with country-rock mixed. At 338¾ ft. a 9 in. leader, and at 342½ ft. another 9 in. leader. These two leaders join the main lode on east side of drive. From 342½ ft. to 352 ft. is partly decomposed andesite rock. No. 6 shaft, north-west crosscut, was started from Martha lode, 20 ft. east of Manning's Pass, and was driven north-west for 92½ ft.; at 41 ft. in, sulphide ore 5½ ft. wide. This is now called "No. 2 reef." Martha lode, south section: Stoping and sinking winzes have been the chief work in this part of the lode. North section of Martha lode: The level is driven on this section a total length of 1,376 ft., of which 1,172 ft. has been done this year. Welcome lode, west end: Driving was started at 585 ft. west of No. 2 shaft, and followed centre section of lode to 707 ft. west, making 122 ft. driven. Empire lode: Stoping has been done extensively on this level since February last. I lode: 75 ft. was driven west of No. 2 shaft, south-east crosscut, on this lode to its junction with J lode, making the total length of this lode to east junction with Empire lode 120 ft. The lode is about 8 ft. wide. L lode: 241 ft. was driven east on the lode from No. 2 shaft, south-east crosscut, and 40 ft. west of same, making a total length of 281 ft. The east end junctions with the Empire lode at Paul's Pass. The lode is 3 ft. wide here, 3½ ft. at the west end; but the general width is 4½ ft. North section of Royal lode: This lode was cut at 90 ft. in No. 5 shaft, south-east crosscut, and has been followed on its south-south-west course for 167 ft. No. 2 reef: At 41 ft. in No. 6 shaft, north-west crosscut, from Martha lode this reef was cut, and is 5½ ft. wide. It has been driven on its course 52 ft. west. The average width is 4 ft., and looks promising going west. Eastward 96 ft. was driven, to its junction with Martha lode. The lode was very irregular in width, varying from 1 ft. to 5½ ft.

No. 4 Level.—Crosscuts: No. 2 shaft, north-west crosscut, has been driven 83½ ft., making a total of 418 ft. from No. 2 shaft. No. 2 shaft, new south-east crosscut, was extended 115 ft., making a total distance of 502 ft. from No. 2 shaft. At 500 ft. reef L is met, 3 ft. wide. North-west crosscut from Martha lode, near Trembath's Pass, was driven a total distance of 186 ft. At 167 ft. quartz was again cut containing sulphide ore and country-rock mixed; width, 9 ft. This is now called "No. 1 reef." No. 6 shaft, north-west crosscut, has been driven a total distance of 60 ft. from Martha lode. South crosscut at west end of south section of Welcome lode was put in 122 ft. from Welcome lode. Martha lode, north section: 441 ft. has been driven during the year, making a total length of 541 ft. This level was driven on north wall of lode. The east face is now 77 ft. east of No. 1 shaft, north-west crosscut, in sulphide ore. No. 1 reef: At 176 ft. in north-west crosscut, near Trembath's Pass, driving east has been done on the lode formation for 81 ft., and also 91 ft. west. Albert lode: Driving north has been done on this lode for 107 ft. from No. 2 shaft, old south-east crosscut. The average width is 9½ ft. This lode has opened up fresh interest in this part of the mine, as it is getting larger and giving better values going north. I lode: 95 ft. has been driven on this lode east of No. 2 shaft. New south-east crosscut intersected the lode, which is about 7 ft. wide. L lode: 141 ft. has been driven on this lode, which is the total length of quartz opened up at this level. At east end it joins Empire lode near Muir's Pass, and at 30 ft. west of No. 2 shaft, new south-east crosscut, comes up against soft blue disturbed country. The general width of lode is 3½ ft.

No. 3 Level.—No 2 shaft, north-west crosscut, has been extended 55 ft., making a total of 390½ ft. from No. 2 shaft. No. 6 shaft, north-west crosscut, from Martha lode has been driven 61 ft. At 26 ft. in, lode formation 2 ft. wide. Albert lode: In the first stope west of Muir's Pass it was found that quartz ran into the north wall. The level was opened on this and followed in a northerly direction for 130 ft. It corresponds to the Albert lode. Royal lode: 105 ft. east has been driven on this lode from No. 2 shaft, south-east crosscut. The average width of the lode is 6 ft.

No. 2 Level.—No. 4 shaft: The crosscut to east end of Empire lode was completed, 78 ft. having been driven in the hard rhyolite rock. Empire lode: The level has been widened and timbered for stoping from Muir's Pass to east end. Albert lode: Prospecting for this lode has been done north of the J and Empire lode junction, and quartz 5 ft. wide was met with and followed for 32 ft. Regina lode: Stoping has been done up to No. 1 level, and will be continued up to within 5 ft. of floor of adit level—a height of 145 ft.—and four rises have been put up to adit level for filling-in purposes.

Adit Level.—Regina lode: 147 ft. was driven on this lode, making a total length of 363 ft. east of No. 2 shaft, north-west crosscut. The lode here is about 1½ ft. wide.

Surface.—Open-cut at intermediate level on Martha lode has been taken along 266 ft. west of Bull's Pass. The lode here averages 23 ft. wide. From the hanging-wall of Martha lode and from the top of intermediate level 29,350 tons of mullock have been removed for filling-in purposes. Surface-cut at Emily level on Welcome lode is now 20 ft. east of Harvey's Pass. Lode is 3 ft. wide.

Shafts.—No. 1 shaft was sunk 94½ ft. during the year, making a total of 572½ ft. from surface. Sinking was stopped in May last. No. 2 shaft was sunk 85 ft. during the year, making a total depth of 728 ft. from surface. Sinking was started on the 23rd September, and continued up to date. The country-rock is undecomposed rock, somewhat brecciated. No. 3 shaft: No sinking has been done. No. 4 shaft was sunk during the year 111½ ft., making a total depth of 561½ ft. from surface. The bottom of shaft is still in the recent andesite country, and should penetrate the older andesite rock in another 50 ft. or so. It was started on the 12th June, and finished on the 19th July. No. 5 shaft was sunk during the year 297 ft., making a total of 735 ft. from the sur-

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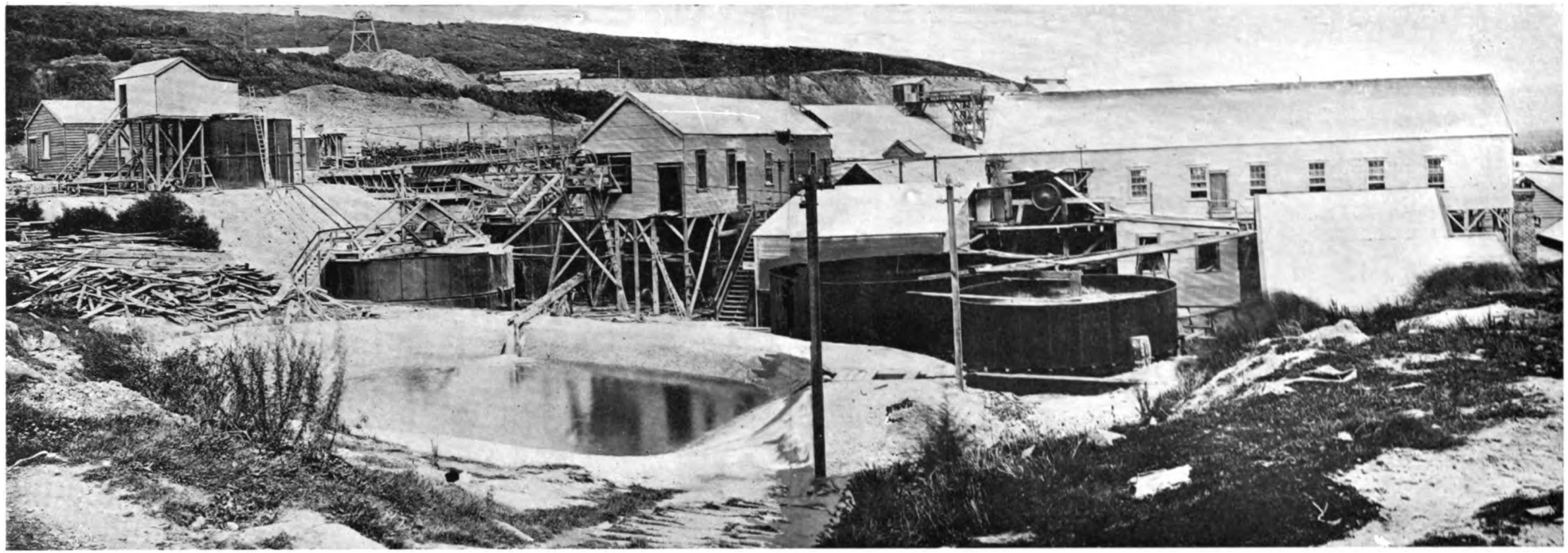

Face p. 85.] General View of Waihi Gold mining Company's 90-stamp Mill and Cyanide Plant at Waihi: Battery-water Reservoir, Settlers, Press Buildings, Agitators, and Solution Tanks in the foreground C.—3.

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face. No. 6 shaft: This shaft was started on the 4th August, and is now down 166 ft. from surface. At 151 ft. down the decomposed older andesite rock is met; from surface to a depth of 59 ft. is soil and sedimentary material; from 59 ft. to 134 ft. is hard rhyolite rock; from 134 ft. to 146 ft. is pumiceous tuff; from 146 ft. to 151 ft. is an old surface containing boulders of rock and loose quartz. This shaft is used for sending down filling material in cages.

Surface Works.—Two Elephant boilers have been built in at No. 5 shaft, and an air-compressor capable of working six rock-drills. A large coal-bin was made in front of boilers at No. 5 shaft, and also at No. 2 shaft, with a short tram and a steam-winch attached. A large blacksmith's shop has been erected at No. 2 shaft.

Mine-development and Dead-work Footage.—Crosscuts through country, 3,115 ft.; driven on course of lode, 7,852½ ft.; crosscuts in lode, 1,277½ ft.; winzes, 5,173 ft.; shafts, 736¾ ft.: total, 3·438 miles, or 18,154¾ ft. It was found advisable to considerably extend the storage-capacity of the hoppers at the several mine-shafts. This has now been done, and a new style of hopper-doors put in, which have been found to be a great improvement.

Product.—A total of 179,485 tons (dry weight) has been treated during the year, being 20,160 tons in excess of the total of 159,325 tons which was treated during the year 1901. Of this total, 65,498 tons has been dealt with by the dry-crushing and 113,987 tons by the wet-crushing processes. The product was 605,997·7 oz. of bullion, exclusive of concentrates and slag tailings shipped to Australia. In addition to a small quantity of concentrates which was dealt with at the Victoria mill, regular shipments of concentrates to Australia have been made monthly. A total of 84,722 tons has been shipped, the value of which, according to assay, was £48,632 12s. 2d. The value of the total product, computed on the usual basis of gold valued at £4 4s. and silver at 2s. per ounce respectively, was as follows: 605,997·7 oz. of bullion (excluding concentrates and slag tailings), £470,286 7s. 7d.; 847·22 tons of concentrates (assay-value), £48,632 12s. 2d.; net outturn of slag tailings, £1,219 15s. 3d.: total, £520,138 15s. The weight (avoirdupois) of bullion produced was as follows: Bullion (excluding concentrates), 18 tons 11 cwt. 0 qr. 2 lb. The value of bullion per ounce—namely, 15s. 6d.—is lower. This is owing to the higher value of silver in the ore per ton, and the better extraction of silver obtained owing to extension of the wet-crushing process. During 1901 the average value per ounce was 17s. 10d.

Reduction-works.—The respective tonnages crushed at the mills were as follows: Waihi mill (dry crushing), 45,175 tons; Victoria mill (dry crushing), 20,323 tons; Victoria mill (wet crushing), 107,833 tons; Union mill (wet crushing), 6,154 tons: total, 179,485 tons. The total average number of stamps running during the year, exclusive of Sundays and the Christmas holidays, during which the mills were stopped, was 307·1.

Waihi Mill (90 stamps).—An incline (self-acting) tram was constructed and brought into use towards the end of the year to facilitate the despatch of fuel to the boilers, and of stores, machinery, &c., required at the mill. The old smithy, which was in a dilapidated condition, and also in a position which interfered with the alteration of the mill from dry to wet crushing, was pulled down, and a new one of larger capacity erected early in the year. The two steel solution-sumps used in the dry-crushing process were also in the way of the extensions, and were removed and re-erected; a third steel sump of larger capacity was also erected. One of the dust-houses, which was also in the way of the rearrangement of the stone-breakers, was dismantled after the dust was removed and treated. A circular saw and travelling sawbench were also erected to facilitate the conversion-work. During the last six months of the year the alterations and additions to the plant necessary for conversion to the wet-crushing process were kept steadily going wherever this was possible without interfering with the running of the mill. The final alterations could not be made while the mill was running. It was consequently stopped at midnight on the 24th December, and with the exception of Christmas Day work was kept steadily going. On the 12th January a trial run of shafting, &c., was made, and on the 13th thirty stamps were dropped and ran intermittently. On the 14th January an additional thirty stamps were started, and have since run continuously with but slight stoppages. On the 21st January the last thirty stamps were started. The adoption of the wet-crushing process has necessitated very considerable alterations and additions to the plant. The shed over the kilns has been removed, and the old roofing, framing, &c., utilised where possible. The kilns are now used simply as storage-hoppers for a reserve of ore. The arrangement and position of the stone-breakers have been changed. A new No. 3 Gates crusher was procured, and has been erected on a large concrete foundation, the ore being tipped direct into it from the tramway-trucks. A revolving trommel and a second Gates crusher (No. 3. size) have also been erected, the ore passing through each in succession. Water-pipes have been connected to each of the mortar-boxes, and the pulp flows to the first two elevating-wheels, from which it flows over the Muntz-metal plates, and thence to the vanners. After being discharged from the last elevator-wheel the pulp passes into the separating-boxes, whence the sands pass to the thirty-two wooden vats (which were used in the dry-crushing process), being fed into them by means of automatic distributers, and the treatment is completed in these vats. The slimes flow to a nest of V boxes, where the clear water is drawn off for refuse in the mortar-boxes, and the slimes pass to two steel collecting-vats 32 ft. in diameter and 14 ft. deep, the treatment being completed by agitation and double filter-pressing, six filter-presses having been erected. A large steel vat has been erected for making up the necessary cyanide-solutions, and a cyanide store erected immediately by this vat.

Union Mill (40 stamps).—This mill ran for eighty-nine days during the year. A total of 6,154 tons was crushed. The mill was started (wet crushing) on the 15th September. Auxiliary steam-power to enable the whole mill to be kept continuously at work had to be provided. The mill had also to be connected by railway with the Martha Mine.

Victoria Mill, Waikino (200 stamps).—At the commencement of the year 100 stamps at this mill were dry crushing and 100 stamps wet crushing. On the 5th April fifty of the dry-crushing

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stamps were stopped, and restarted on the wet-crushing system five days later. On the 31st July the remaining fifty dry-crushing stamps were stopped, and started again on the 5th August, on which date the whole of the 200 stamps were wet crushing. By the dry-crushing process a total of 20,323 tons was treated, and by the wet-crushing prccess a total of 107,833 tons was crushed. The smaller of the two turbines was removed early in the year, and replaced by a 200-horse-power Gilkes turbine which was in stock. The hydraulic elevator formerly in use for raising the quartz after it passes the stone-breakers to the mill ore-bins was replaced by a new bucket-chain elevator. For raising the pulp from the 100 head of stamps which were converted four sand-pumps were erected, with separate rising mains to the trestle launder. A slimes-elevator wheel was constructed at Waikino and has been erected, and the number of steel agitator-vats was increased to ten, collecting-vats to six, and solution-vats to three. Two more Martin presses were added, making a total of five Martin and two Johnson presses besides a small Define press. A Green economizer was erected and brought into use in connection with the mill-boilers towards the end of the year. A coal-bin of a capacity of 300 tons has been constructed, into which the wagons conveying the coal from Paeroa can readily discharge.

The company has had 1,141 men employed on an average during the year. The amount paid in dividends for the year was £208,644 18s. 11d.; since commencing work, £1,005,934 6s. 2d.

Waihi Grand Junction Gold-mining Company.—At the beginning of the year operations were chiefly confined to developing the Martha lode at the 500 ft. level. The drive westward on the lode was extended a distance of 161 ft. from the crosscut, and a rise put up on it to a height of 41 ft. As it was risen on the lode got gradually thinner, and, as the assays taken from the stone from time to time were not encouraging, this work was discontinued. The eastern drive on the lode was driven for a distance of 184 ft. At a distance of 113 ft. east of the crosscut a winze was sunk to a depth of 25 ft. Where the winze was commenced on the level the reef was only 3 ft. 6 in. in thickness, but as it was sunk upon it opened out to a width of 13 ft., and the stone assayed from here gave highly encouraging results. The water was too heavy to contend with, and in consequence this was stopped; but the manager is of opinion that there is every indication of the lode improving as it is sunk upon, and a valuable block of ground will be opened up when the next level is put in. Six months' protection was granted by the Warden for this section of the property, but in the month of November last work was again resumed, the eastern drive being extended with a view to getting a connection with No. 2 shaft to ventilate this eastern section of the mine. In the west section a crosscut drive was driven at the 500 ft. level of the C shaft for a distance of 890 ft., where a rise was put up and a connection made with No. 2 level of the B shaft, which has given excellent ventilation to this part of the mine. A little work has been done in what is termed the Martha lode in this section near the B shaft, but so far as it has been proven it is low-grade ore. The company has gone to considerable expense in erecting engineers', carpenters', and blacksmiths' shops all under one roof, and also put up new poppet-legs preparatory to sinking and opening out from the main shaft, which shows that they have every confidence in the lode improving in depth, and that at no distant date the mine will become productive.

Waihi Extended Gold-mining Company.—At the end of the previous year the sinking of the shaft was in progress, and was continued until a depth of 520 ft. was attained, when a chamber was opened out, and driving was commenced in southerly and northerly directions. The south drive was put in a distance of 206 ft.; but, although the country-rock to all appearance was all that could be desired, yet nothing of importance was discovered, and this drive was stopped for the time being. The north drive is in a distance of 470 ft. from the shaft, and is still passing through a good channel of country, in which quartz stringers of a promising appearance have been cut through, and it is fully expected one of the Waihi Company's lodes may be met with in this drive at any time. The theory that gold is more likely to be found at a depth to the east of the Waihi Mine will be tested by this north drive, as it is going in under the rising ground, and will soon be a considerable depth below the surface; but if something is not discovered in this drive the company intend to sink the shaft to a further depth, and develop the mine at a deeper level.

Waihi Gladstone.—This mine, which is owned by a syndicate, has been steadily worked, the operations being principally confined to opening up the reef from the main shaft (where it has been driven on for a considerable distance), and varies from 2 ft. to 6 ft. in width. All the ore broken out is being saved for treatment at a small battery of five stamps which is in course of erection near the shaft, and is for the purpose of testing the value of the lode and ascertaining the best method of saving the bullion. A small engine for winding has been placed in position, which will enable the ore and material to be raised and lowered in the shaft more expeditiously than has been previously done by means of a horse-whim. An average of eight men has been employed, but no crushings have taken place during the year.

Waihi South.—This mine was under protection in the early part of the year, one of the reasons for this being that the pump and plant in use were not of sufficient power to contend with the water met with in the crosscuts driven from the shaft. At the expiration of the protection arrangements were made with the Grand Junction Company whereby the Waihi South Company were allowed to put in a drive to prospect their ground adjacent to the Waihi Company's property from the 500 ft. level of the C shaft of the Grand Junction west. There being a considerable distance to drive before the Waihi South boundary was reached, and the work being beneficial to both companies, the work was done conjointly. After driving a distance of about 90 ft. a large lode formation was intersected, and the course defined. Then it was considered advisable to start a crosscut from the main level at a point 100 ft. further south. This has been driven a distance of 60 ft., and it is expected the lode will be intersected in about another 50 ft. of driving. When the lode is met with it is intended to drive on it to the Waihi South boundary, a distance of 400 ft.

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Operations will then be carried on in this company's ground should the prospects warrant it. An average of six men is employed.

Waihi Consols.—Boring operations were carried on in this property up to the month of August with the diamond drill, the object being to locate the Waihi reefs, which are supposed to be on the strike of this company's mine; but, after reaching a depth of 330 ft. with one hole, by some means a piece of metal got into the hole and did considerable damage to the crownhead and diamonds. After several unsuccessful attempts being made to extract the metal the hole was abandoned, and the drill removed. Protection was then applied for and granted by the Warden, to enable the company (who went into liquidation to reconstruct and raise further capital) to prospect the property. I am informed the concern will be registered as a limited company, and it is fully expected vigorous prospecting-work will be undertaken to prove the value of the mine. An average of three men was employed.

Waihi Consolidated.—An option is held by Mr. J. Ziman over this property, which is at present under protection. A little prospecting was carried on during the year, but no work of a permanent nature has been undertaken. The most of the ground adjacent to the Waihi Company's mine is difficult and expensive to prospect, as it is low-lying land and contains a great amount of water, which requires pumping machinery and capital to work it. Two men have been employed.

Pride of Waihi.—There has been very little work done on this ground during the year, the company up to the present not having provided any pumping machinery for their shaft, in which a greater inflow of water was met with than could be dealt with by hand-labour. As the ground could not be prospected otherwise than by sinking, operations were stopped, and the men employed in the erection of a manager's cottage, &c., on the property, pending the shareholders' decision as to the erection of machinery or otherwise giving up the ground.

Ohinemuri River Claims.—Mr. Rich and party have taken up several river claims in the Ohinemuri River with the object of treating the tailings that have been allowed to run away from the Waihi and Waihi-Silverton batteries. They have carefully sampled the tailings, and the results obtained have been of such an encouraging nature that an up-to-date plant for treating the tailings has been designed, and is in course of erection between Waikino and Waihi. This should be completed early in the year.

Waitekauri District.

Waitekauri Gold-mining Company.—Operations in this company's mine during the latter part of the year have not turned out as successful as could be desired. A considerable amount of prospecting-work has been carried out in various parts of the property with the object of trying to locate payable ore. Unfortunately the management has been unable to do so up to the present. A large body of calcite came in at No. 7 level and cut the gold-bearing quartz out, and was the cause of the company being compelled to close down the battery pending the development of payable blocks. In the Golden Cross section, No. 1 shaft and No. 1 level, the main drive north has been extended 321 ft., making a total of 531 ft. from the shaft. This drive is being continued with a view to proving the continuation of the ore-chute northward at this depth. A connection with No. 5 level has been made in 216 ft. of rising; crosscuts have also been projected at various points. At 80 ft. below No. 5 level an intermediate level has been opened, and drives on the lode both northward and southward have been commenced. No. 5 level: Operations have been chiefly centred in stoping the blocks of payable ore on the Southern Cross reef and the main reef at this level. 7,200 tons of payable ore, totalling in value £12,900, has been obtained from these blocks. At Nos. 2, 3, and 4 levels comparatively little work has been done. At No. 1 level the main drive north has been driven 721 ft. through large bodies of low-grade ore. Several rises have connected with Corbett's level, and a large quantity of ore has been contributed by the various blocks opened. The main crosscut west from the shaft has been further extended 320 ft. with the object of locating the Realm reef, which had previously been encountered at Corbett's level. This work has not been sufficiently advanced to prove its object. Corbett's level: The main drive north in the foot-wall of the lode has been driven 262 ft., some fair-grade ore being obtained. Empire section: A prospecting-drive has been extended eastward 443 ft.: the lodes were intersected in the course of this work, and these await further development. Old Waitekauri section: In the Horn level the drive south has been extended 165 ft. on the reef. A connection with the intermediate level was made by a rise. Intermediate level (90 ft. below the Queen level): About 800 tons of ore, averaging in value £3 10s. per ton, was crushed from this block. Summary of work—Golden Cross section: No. 7 level—driving 321 ft., crosscutting 157 ft., and rising 216 ft.; No. 5 level—driving 23 ft., crosscutting 50 ft., sinking 13 ft., and rising 34 ft.; No. 4 level—driving 73 ft.; No. 3 level—crosscutting 25 ft.; No. 2 level—driving 118 ft.; No. 1 level—driving 770 ft., crosscutting 420 ft., and rising 192 ft.; Corbett's level—driving 262 ft. Empire section: Crosscutting 443 ft. Old Waitekauri: Driving 165 ft., crosscutting 95 ft., rising 106 ft. Total, 3,483 ft. Quartz won from stopes: Golden Cross section, 13,497 tons; Old Waitekauri section, 800 tons: total, 14,297 tons. Milling and treatment: 14,297 tons of ore has been crushed and cyanided from the various places in the mine, from which 25,131 oz. of bullion was obtained, worth £24,007 7s. 2d. Milling has been suspended pending the development of further payable blocks in the mine. This company has had an average of 122 men employed.

New Zealand Jubilee Gold-mining Company.—This mine has been continuously worked during the year, the operations being confined to extending the low level and prospecting. The low level has been extended a distance of 950 ft., making the total distance from the mouth of the drive 3,760 ft. The greater part of the driving done last year was on the course of the lode, which varied from a few inches to 6 ft. Good assay tests were reported to have been obtained from time to time as the work proceeded, but no bulk crushings have been yet made to prove the actual value of the lode. About 700 ft. of crosscutting and driving on other reefs has been done at the low

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level, and a rise put up 254 ft. to connect with the Horn level. This work has given an outlet, and has greatly improved the ventilation. The Horn level has been extended a further distance of 300 ft., which now enables the company to work the different reefs that traverse the property on the south end of the Old Waitekauri Mine. The development-work of the mine has reached a point which should enable the owners to determine a course to be pursued with their property in the near future. An average of twenty-eight men has been employed.

Alpha Gold-mining Company.—This mine was under protection in the early part of the year, on the expiration of which operations were again resumed, the work being chiefly confined to driving and rising on the No. 4 reef at various points with the hope of opening up a payable chute of ore. This has proved unsuccessful, as no payable quartz was met with, and the company now contemplates surrendering the ground after having expended a large sum of money on prospecting and in the erection of a twenty-stamp battery and cyanide plant. It is to be regretted that the enterprise of the company has not been attended with better results. An average of four men was employed.

Burbank.—Operations in this mine have been directed to extending the low-level crosscut, which is now in a distance of about 1,100 ft., but up to the present nothing payable has been met with. It was fully expected the Te Ao Marama reef would have been intersected before this if they kept the same course as in the section named in the Komata Company's mine, and in consequence is a great disappointment, especially as the shareholders worked the ground in a systematic manner, and had every faith in something important being found. Six men were employed.

Waitekauri King.—This mine has been worked by J. Broadbent and party, who have directed their attention to driving and stoping on No. 1 reef at No. 2 level. The reef has varied from 6 in. to 2 ft. in thickness. 17¾ tons of quartz was broken out and crushed for a return of 41 oz. 1 dwt. of gold, valued at £58 4s. 4d. An average of three men was employed.

A limited amount of prospecting-work has also been carried on in the Young New Zealand, Hunua, Eclipse, and Starlight Claims, but nothing of importance discovered.

Ohinemuri Syndicate Claims, Owharoa. — No work has been done on this property during the year.

Rising Sun.—Prospecting and development work have been carried on in this property with a limited number of men. The reef operated on varied from 6 in. to 6 ft., some of it being of a very kindly description, and in places it is said to contain bullion in payable quantities. A test parcel of half a ton was treated at the Thames School of Mines by the cyanide process for a return of 3 oz. 1 dwt. of bullion, valued at £1 18s. 5d. An average of two men was employed.

Harvey Claim.—Prospecting-work has been carried on by two men, who are at present putting in a surface level with the expectation of finding the run of gold which was worked successfully some years ago. Very encouraging prospects have been obtained, but nothing of a defined or permanent nature has yet been intersected.

Karangahake.

Woodstock Gold-mining Company. — During the first three months of the year operations at the mine and mill were suspended, pending reconstruction of the company. This having been accomplished, another start was made in April to push on the development-work by driving the No. 6 level southwards from the shaft, and by sinking the No. 1 winze from No. 5 level to connect with this level. The No. 6 level at the end of the year had been advanced 730 ft., and the winze from No. 5 level connected therewith at a point about 700 ft. south of the shaft, after sinking and rising 250 ft. Stoping has been in progress since June, ore being broken from over Nos. 2, 3, 4, and 5 levels. About 8,000 tons of ore had been broken at the end of the year. Crushing operations were resumed at the end of August, and have been continued without a break since then. At the end of the year 7,814 tons had been treated, yielding bullion to the value of £12,434 7s. The mode of treatment has been the same as heretofore—viz., crushing through breakers and stamps, amalgamation with Muntz-metal tables, concentration over vanners, and cyanidation of the sands, concentrates, and slimes, the former by percolation, the two latter by agitation. A new steam plant has been installed as an auxiliary to the water-power during the dry season of the year. This plant consists of two 150-horse-power Elephant boilers and a 250-horse-power Corliss engine. These have been set up at the mill, and are so arranged that either the mill or compressors, or both, may be driven by either steam or water, or, if need be, both steam and water power can be coupled together. The plant has had a fortnight's run, and everything works admirably. An average of ninety-one men has been employed.

Talisman Consolidated.—Operations in this mine have been vigorously pushed ahead during the year in opening up and developing the property at various points, the principal work being the intersection and exploring of the Talisman main lode at the No. 8 level. This has proved to be a large body of payable quartz varying from 4 ft. to 16 ft. in width, and has been driven on in a southerly direction for a distance of about 500 ft. Stoping operations are proceeding over the back of this level on a block of ground 200 ft. in height between 7 and 8 levels. No. 10 level: On the 26th April negotiations were entered into with the Woodstock Company for the use of that company's No. 3 level, situated at a depth of 200 ft. below No. 8 level, and were brought to a successful arrangement being made, when the company immediately commenced work at this level. The reef here is a large body of ore at least 10 ft. in width. During the period under review crosscuts were put in at intervals to ascertain values, and for nearly 100 ft. assay returns of £2 per ton were obtained, while some isolated patches of very rich ore were met with. The very divergent strike of the reef at this level compared with that in the workings above tends to show that this is either a separate reef or a branch of the main ore-body, but this will be proved as soon as time will permit by crosscutting, &c. A chamber has been cut out and an incline shaft is being sunk on the reef from No. 8 level to connect with

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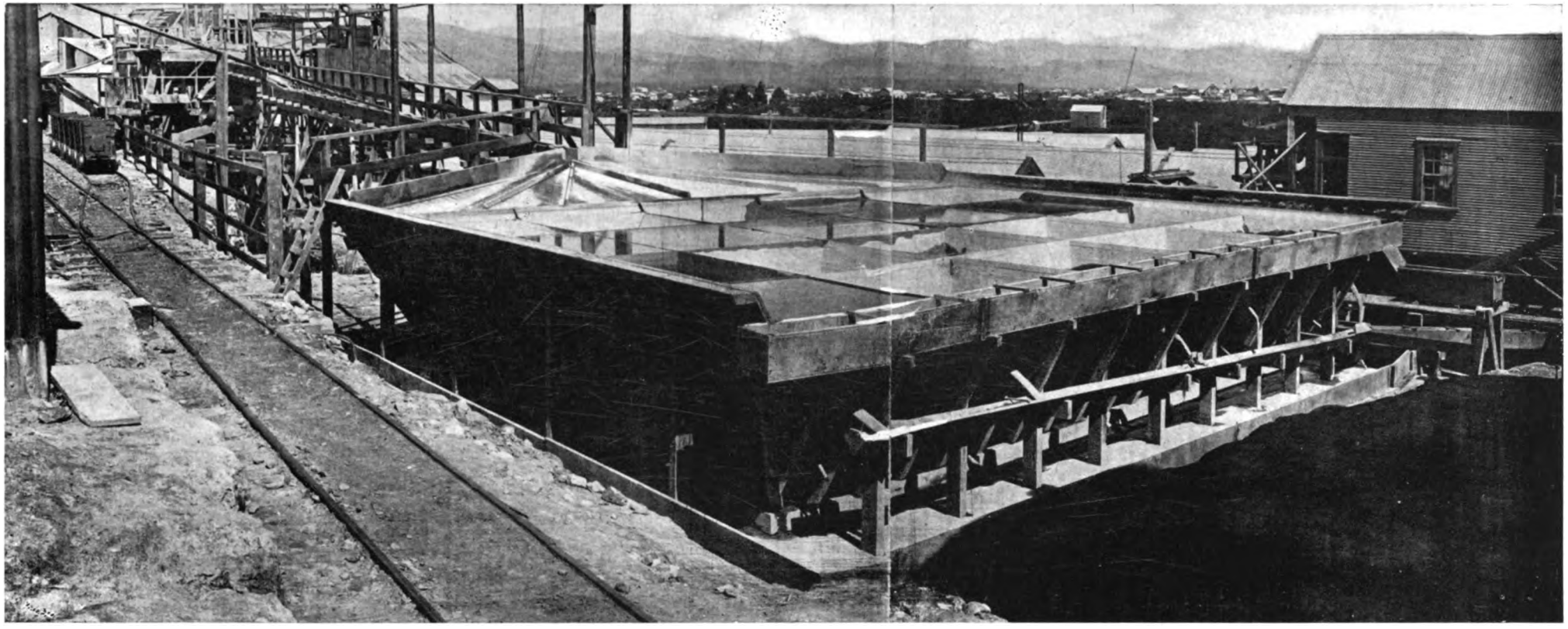

Face p. 89.] View of Separating-boxes and Slimes-thickening Boxes at the Waihi Gold-mining Company's 90-stamp Mill at Waihi. C.—3.

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a level to be called the No. 9 level, and also No. 10 level, and when completed will be the outlet for all the ore below the No. 8 level. The No. 9 level is being pushed ahead from the Woodstock stopes with all possible speed, and, as there is a distance of 500 ft. to drive on the course of the lode to the incline shaft, this will open up a large block of ore containing probably something like 50,000 tons. This is merely an approximate estimate, as absolutely nothing is known of widths and values of the whole 200 ft. of vertical extent between Nos. 8 and 10 levels. A crosscut east from No. 8 level has been commenced in order to ascertain whether the rich vein struck in the crosscut at No. 7 level continues down. Should this vein (which has given such favourable results) prove to be something more than an isolated patch, the discovery will be a most important factor in the matter of returns from the mill. The return sent in from this mine up to the end of the year was 13,396 tons for 50,409 oz. of bullion, valued at £20,163 13s.; and an average of 120 men was employed.

New Zealand Crown Mines (Limited).—It is pleasing to note that operations in this mine have again proved remunerative, whereby, after working-expenses, &c., were all paid, a substantial surplus was left, enabling the directors to disburse in dividends to the shareholders during the year the sum of £15,000, which must be highly satisfactory, more especially as the prospects of the mine are well maintained at the deep levels, thus giving every reason to expect that payable returns will be forthcoming for an indefinite period. The main incline shaft has now reached a depth of 430 ft., and sinking is still proceeding. The No. 2 level from the main incline shaft has been extended 315 ft., making a total distance from the shaft of 2,309 ft. The average width of the reef has been 4 ft. 1 in., which yielded for a distance of 31 fathoms 10 tons 6 cwt. of quartz per fathom, worth about £1 8s. 8d. per ton; the remaining 128 ft. 6 in. has been driven on the course of a small leader which is supposed to be the reef (as there are no indications of the reef being heaved out of its course), but this will be proved by crosscutting into the walls when time will permit. No. 3 level: This level has been extended a total distance of 378 ft. from the shaft. The reef at this point was pinched up to about a foot in thickness owing to the hard nature of the country, and it is sometimes difficult to know whether it is the reef or not, as there are no indications whatever showing in which direction (if any) it has been heaved out of its course. This level was also extended a distance of 125 ft. south of the shaft, and connected with a drive that had been driven north from the winze. The drives north and south of the winze and south of the shaft now constitute the No. 3 level. This level south of the winze was extended 284 ft., and in this extension 428 tons of quartz was broken out, which gave a return of £1,115; the average width of the reef was 3 ft. 7 in. The total length of the level from the shaft is 1,741 ft. No. 4 level: This level has been driven south of the shaft a distance of 169 ft. alongside the reef, which is hard and small, but of good value for some considerable distance. 14½ tons of quartz was broken, which was worth £39. The reef has now opened out in width, and the value of the quartz improved considerably. In some of the samples a little free gold could be seen. In the No. 1 level, south of the main incline shaft, and south of the Great Fault, 94 fathoms of the reef was stoped out over the back of the level, which yielded 1,169½ tons of quartz, worth £2,699. At No. 2 level, south of the main shaft, the stopes have produced very good ore during the year; 672 fathoms of ground yielded 5,988¾ tons, worth £19,287. No. 3 level, south of the main shaft: On the back of this level 774 fathoms were stoped out, which yielded 9,456 tons of quartz, worth £29,098. There has also been a large amount of driving, stoping, and rising done at and above the Waitawheta Tunnel. A total of 33,523 tons was crushed from the various places in mine for bullion worth £74,764 4s. 2d.; and 245 men were employed.

Comstock United.—Operations in this mine have been confined to driving the low-level crosscut, which has been extended 500 ft. during the year, making a total distance of 1,700 ft. from the mouth of the level. Although the point has been reached where it was expected the reef would be intersected, nothing of importance has yet been met with, thus showing that the lode has taken a different underlie to that shown on the surface, or otherwise it does not continue down. An average of six men has been employed.

A little prospecting has been done around the mines mentioned in the Karangahake district, but no important discovery has been made.

Te Aroha District.

Premier and Mammoth Reef Claims, Waiorongomai. — In the early part of the year the operations in the mine were confined to development-work, the results being most satisfactory, as a payable chute of ore has been opened up which will keep the battery working for some time to come. The portion of the lode that is being operated on averages 4 ft. in width, and is the continuance southwards of that worked during the past three years. The gold and silver is evenly distributed, making selections of the richer portions of the lodes (I am informed) impossible. Since Mr. Hardy took over this property he has crushed 3,545 tons of ore for a return of £8,222 10s., being an average of £2 6s. 5d. per ton; and from August to the end of the year the ore has proved to be much richer than formerly, as 388 tons has yielded £1,467 0s. 11d., an average of £3 15s. 8d. per ton. The system of battery treatment has been wet crushing and concentrating by vanners. The tailings assay 10s. per ton, representing an 88·37-per-cent. saving on present ore value. An improved automatic arrangement will shortly be installed by which it is expected the loss will be reduced to 5s. or 6s. per ton.

It is intended to develop energetically the Premier, Colonist, and Mammoth Claims, to add electric light, and enlarge the battery by a further ten head of stamps now on the ground. An average of twelve men was employed on this mine.

Cadman Mine. — Operations in this mine were principally confined to driving and stoping on the main reef from the road level, from which 114 tons of quartz was broken out and treated for a return of 70 oz. of gold, valued at £202 8s. Two men were employed.

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A little prospecting was done in this locality, but no discovery of any importance made.

Tui Mine, Te Aroha.—Edwards and party have had men employed on this property, and have broken out several parcels, and have shipped some to New South Wales and other places for treatment. The ore contains 60 per cent. of lead, besides silver, copper, zinc, and other minerals, and on the whole gives a high value, the owners being confident that if they had facilities for treating the ore at a reasonable cost it would pay handsomely. This mine has been tried before, but I understand the ore was treated principally for the gold and silver. Lead, &c., at that time was not considered to be of much importance, whereas it is now contended that if the other metals were saved it would be the means of making it a payable concern. This, like a number of other mines in this district, requires capital to make it a success.

Paeroa District.

Komata Reefs.—In the Komata reefs section stoping operations have been carried on during the year from the following levels—viz., No. 4 level, A level, and B level—resulting in an output of 6,685 tons of quartz, which yielded approximately £15,800. This quartz was all obtained from Wilson's lode, the average width being 3 ft. Very little development-work was done during the year in this section of the property, the chief energy having been directed to the opening-up of the Te Ao Marama section, which was acquired by the company early in the year. Te Ao Marama section: A connection was made from the Komata reefs section to this piece of ground by extending the Komata reefs No. 2 level to the Te Ao Marama shaft, a distance of 497 ft. The connection is at the Te Ao Marama No. 4 level, which corresponds to the Komata reefs No. 2 level. or 376 ft. below the collar of the shaft. A considerable amount of development-work has been done on Nos. 2, 3, and 4 levels, resulting in large reserves of ore having been made available for stoping. Stoping operations were carried on for about nine months, resulting in 5,715 tons of quartz having been sent to the battery, which yielded £13,800 approximately. This ore was chiefly obtained from the No. 1 reef, the width of which averaged about 5 ft. Battery: During the year the cyanide department has been considerably enlarged, the object being to give the ore longer treatment. This has resulted in a higher percentage of extraction. A great many minor improvements have been made to the plant, the principal being the addition of a second stone-crusher, the erection of a quartz-hopper, and the installation of a small plant for the treatment of slimes. A steam plant has also been put up, so as to insure steady crushing during the summer months. The capacity of the plant is now being increased by the addition of a 5 ft. Huntington mill. The cyanide department will be further enlarged; the slimes plant will also be enlarged, and should be completed early in March. The tonnage treated during the year was 12,190 tons, and the value of the bullion recovered was £27,140 1s. 5d.

Just in Time Special Quartz Claim.—This claim adjoins the Komata Reefs; the area is 50 acres. About 120 ft. of crosscutting has been done and No. 1 reef driven on. About 10 tons has been broken out and assays made of the ore, which gives a very high value. I am informed that £5 per ton has been offered for the quartz stacked on the surface.

Byron Bay.—From two to four men have been employed in this mine during the greater part of the year. The operations were chiefly confined to extending the No. 2 level to prove the value of the reef, which has been opened up on the surface, and from which good dish-prospects could be obtained; but up to the present there has not been sufficient work done on it to estimate the value of the discovery. The No. 2 level will require to be extended a further distance of 112 ft. to intersect the reef.

Hikutaia Gold Syndicate.—Operations in this mine were steadily carried on during the year, the work being confined to stoping on the main reef over the Nos. 2 and 3 levels, where the lode was previously opened up to a considerable extent. The syndicate has done a large amount of systematic work, and treated no less than 5,231 tons of ore, but as it was too low grade to pay the working-expenses it was found necessary to stop work in the mine for the present. This is to be regretted, as the shareholders were confident that after getting the small crushing plant on the mine it would have paid and left a small margin of profit.

Maratoto Mine.—In the Maratoto section the No. 5 level crosscut was extended to a distance of 545 ft., where the Maratoto reef was intersected. The reef, where cut through, was 10 ft. wide, and composed of solid white quartz intermixed with bunches of sulphides, these proving to be of good value. A rise has been commenced at this point and is now up a distance of 19 ft., and, judging from assays made from time to time, the ore appears to be improving as it is risen upon. The lode has been exposed at six different places along the outcrop, extending about 6 chains north of No. 4 level, and will average 8 ft. in width. In the Pay Rock section the No. 1 level has been cleaned out and put in working-order, and the intermediate level driven 164 ft. south of the rise and 96 ft. north, making a total length of 270 ft. These two drives are still being extended for the purpose of proving the value of the reef. An average of six men has been employed.

Khartoum Mine.—This mine has been continuously worked during the year. A small block of ore has been stoped out above No. 1 level to the surface, where the reef varied from 1 ft. to 2 ft. in width; the quartz obtained is said to be worth £5 per ton. At the No. 2 level about 35 ft. of crosscutting both east and west has been done with a view to testing some of the companion reefs. On the hanging-wall side a reef 12 in. thick was met with, which carries a fair percentage of gold. A crosscut has been driven at No. 3 level for a distance of 90 ft., and three distinct reefs, ranging from 1 ft. to 4 ft. in thickness, have been intersected. The largest reef is supposed to be the northern continuation of the Melbourne reef, which has been exploited in the upper levels. The starting-point of the No. 4 level is about 30 ft. above the Maratoto Creek, which is on the northern boundary of the mine. It is 1,700 ft. north of and 700 ft. below the No. 3 level. Here driving has been done to the extent of 350 ft. along the course of the Melbourne reef,

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which varies in width from 4 ft. to 5 ft., and carries more or less gold and silver. Several other reefs have been discovered on the property, but no work of a permanent nature has been done on any of them. An average of four men has been employed.

Golden Cross.—This mine has been stopped, and the electric plant and other machinery is being removed, as the company does not intend to spend any more money on the property.

Prospecting operations have also been carried on in the Samoa and Incognito Claims with two men each. The prospects met with in both claims are said to be of an encouraging nature, but up to the present no crushings have taken place.

East Coast District.

Mananu Mine, Whangamata.—Crushing operations were carried on up to the month of September with fair results, but, as the payable ore that was opened up on the higher levels became exhausted, all work was stopped for a time to enable the company to raise capital and decide on a scheme of development on the various reefs and at deeper levels than have been operated on hitherto. There are also several reefs outcropping on the surface of the property on which little or nothing has been done. The company intends testing these as soon as money is available for the purpose. Up to the time of closing down the battery the operations were chiefly confined to the Studholme (No. 1 reef), which trends in a northerly direction with an easterly underlie, and varies from 1 ft. to 3 ft. in width. Some of the ore contained a very high percentage of silver and gold. 3,508 tons of ore was treated for £7,595 8s. 10d., and an average of forty men was employed.

Whangamata Proprietary.—This property, on which a large amount of work was done, and payable ore obtained at the upper levels, was sold by auction in the early part of the year, and purchased on behalf of a syndicate by Messrs. Mitchell and Bonwick, who have been negotiating with a view to forming a company to raise capital to enable them to prospect the deep levels, which they consider have not been tested to any extent, and in which they are confident something of importance will yet be discovered. I am informed they have been so far successful in raising capital, and that work will be resumed in about two months' time. The property has been under protection during the year and in charge of a caretaker.

Chelmsford.—For the past year the company crushed and treated 2,169 tons of ore for a yield of 1,363 oz. 14 dwt. of bullion, valued at £2,531 2s. 8d., and employed an average of twenty-five men. Considerable development-work has been done during the year. A low level has been driven a distance of 600 ft., leaving 130 ft. yet to drive before the reef is intersected. This will give 214 ft. of "backs" to the level above. A winze is being sunk on the main reef from No. 2 level, and to which communication will be made with the low level. The reef is 2 ft. 6 in. in width, and for the 30 ft. sunk shows it to be of payable quartz. Other development-works have also been done in the way of driving main levels ahead and crosscutting at different points. In some cases good results have been met with. The company contemplates in the early part of the incoming year to close down the battery and to direct all their energies in pushing ahead the low level, the No. 2 level, and the sinking of the winze for the purpose of thoroughly testing the value of the mine preparatory to conducting operations on a larger scale.

Taniwha.—During the year this company have spent a good deal of money in the direction of erecting a heavy two-stamper battery and two berdans, which are driven by a 15-horse-power Tangye oil-engine; also in laying a tramway to connect the mine with the battery and different mine-works. The mine constitutes a small hill interlaced by a mass of quartz stringers, all carrying a little gold. Crushing was commenced in April last, when 328 tons was treated for 121 oz. 10 dwt. of gold, valued at £287 0s. 5d.; but, this not being payable, the company suspended operations, and have let the mine on tribute to a good party of men, who are sanguine of meeting with stone that will give payable results.

Broken Hills, Tairua.—This property, which is now established as one of the principal gold-producers in the district, has been vigorously worked during the year, with very satisfactory results. 4,328 tons of ore was broken out of the Blucher reef and treated for 9,921 oz. of bullion, valued at £19,097 18s. 6d., which enabled the directors to disburse in dividends the handsome sum of £8,947 11s. 11d. This must have been very gratifying to the shareholders. As the prospects of the mine generally indicate that payable returns will be maintained from the various reefs operated on for an indefinite period, there is every reason to conclude the company possesses a valuable property. The distance driven on the reef at the low level was something like 600 ft. The reef varies in width, contracting and opening out suddenly, and at the end of the year it was small in the south end and about 2 ft. wide in the northern face. The average height of the blocks from the low level is something like 500 ft. The Night reef has been driven upon at the low level for a distance of 160 ft., yielding highly payable ore, and the reef still looks well going south. A leading stope is being carried along on this reef on the back of the low level, and a rise is proceeding upwards on it, and in both places good payable ore is being produced. This reef was first cut in the No. 2 level, which is 400 ft. above the low level. Seaver's leader was driven on from the east crosscut, where the Night reef was again cut and driven on for a distance of 35 ft. upon payable ore. The management is sanguine it will prove to be quite as good as the Blucher lode. The Purrow reef was met with in the stopes being worked upon in the Blucher reef about 80 ft. above the low level. It was driven on for 32 ft., with encouraging results. The Wellington reef was first cut in No. 4 level, on the north side of the hill; it is about 4 ft. wide. Assay tests of the stone give payable results, and when this reef is opened up it will no doubt enhance the value of the property. There is also the New Year reef, on which comparatively little work has been done; and although this reef does not give as good results by assay tests, yet there is every reason to believe it will turn out all right when opened up. An average of fifty men has been employed.

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A little prospecting-work has been done on the following mines: viz., the Gem, Myosotis, and Golden Hill Claims, from which fair dish-prospects have been obtained, but no work of a permanent nature has been undertaken up to the present.

Golden Belt Mine, Neavesville.—In the early part of the year work was confined to prospecting, sampling, and assaying the various reefs which were opened up, to a large extent, by companies and other owners previous to the present holders, with a view of ascertaining the general value of the ore before erecting an up-to-date plant and adopting a scheme for the development of the property. The operations have been carried out under the supervision of Mr. H. H. Adams, and the results obtained are, I am informed, considered satisfactory. The company having decided to erect a thirty-stamp battery, the timber necessary for the building, &c., has been cut by hand-sawyers on the ground. In the mine a considerable amount of preliminary work has been done in repairing and cleaning out old levels, and since this was accomplished the low level has been extended to a point where a connection will be made with the upper levels, and the quartz broken out at those levels will be conveyed down through passes, &c., to the low level, and from thence by an aerial tramway to the battery. An average of six men has been employed in the mine.

Eliza Claim, Katikati.—A local syndicate is again trying this piece of ground. Two men have been employed on it for a time, and a test ton of quartz has been sent to the Thames School of Mines for treatment, but the result has not yet been made known.

Te Puke Reefs, Te Puke.—Prospecting operations in this mine have been carried on with three men during the year; but a company has now been formed, and work is to be resumed at once, with a view of proving the value of the property by opening out a low level and otherwise prospecting the property before commencing to erect a crushing plant.

Waihi Beach Claims, near Waihi.—This ground was under option for some considerable time, and a few men were occasionally employed; but the work was simply a little scratching here and there, and of little or no value. The company are advised that to prove the value of the property it will be necessary to sink a shaft some distance back from the beach, on which a pumping-engine could be put on should the water be troublesome, but there is nothing to indicate that much water will be met with. This matter is under consideration.

Thames District.

Miner's Right Claim, Puriri.—Operations in this mine have been steadily carried on during the year. The work has been chiefly confined to driving and stoping on various small leaders near the surface, and from which 171 tons of ore was broken out and treated at the owner's small battery for a return of 95 oz. 9 dwt. of gold, valued at £266 9s. 6d. An average of five men was employed.

Puriri Gold Estates.—Only a very limited amount of work has been done on this property, as it was under protection the first half of the year. Since then four men were employed in prospecting on the different sections of the ground, but up to the present no important discovery has been reported.

Klondike.—In the beginning of the year this mine was taken over by an Auckland company, who proceeded to erect a five-stamper battery to test the property, and before doing this a sideling track over a mile long, and costing about £150, had to be formed to enable the machinery to be conveyed to the site for the mill. In the battery building provision has been made for ten stamps should future prospects warrant it. The five heads are now erected, and crushing operations will be commenced as soon as the mine and battery are connected by an aerial wire tramway which is under way. The motive power for the mill is water, and the water-race (which is completed) is 10 chains in length, and connected with the battery by 400 ft. of galvanised-steel pipes 8 in. in diameter. The vertical height of the water-race above the battery is 264 ft., which gives a pressure of 114 lb. to the square inch. The machinery is driven by a 3 ft. Pelton wheel, manufactured by A. and G. Price, Thames. Very little driving has been done in the mine during the year—about 30 ft. altogether. The formation which carries the gold consists of hard country-rock, with oxide-of-iron veins running through it, from which good dish-prospects can be obtained. Regarding the future working of the mine, driving will be carried along the auriferous formation, and sinking will be resorted to before trying to prove the mine by long crosscuts. An average of six men was employed.

Sheet Anchor, Omahu.—Operations in the mine during the year have been exclusively confined to prospecting. The low level was extended a considerable distance past the point where it was expected the reef would be intersected; but, it not being met with, this work was stopped and attention directed to driving on a reef formation which had been previously cut through in the level some distance back from the face. The reef averages 2 ft. in width, and has been driven on a distance of 200 ft., and a rise has also been put up on the reef 35 ft. to prove its value. Although carrying a little gold, it has not been proved to be good enough to treat in any large quantity. A prospecting crosscut was also put in from the surface at a point some distance westward of the main workings, where a large reef formation has been intersected. This carries a little gold, but requires further development to prove the value of the discovery. No quartz was crushed in any quantity. An average of four men was employed.

Fortuna, Hauraki.—Operations in this mine during the year have been principally carried on by tributers on the various leaders that traverse the property. At the end of the year the Hague Smith level was being cleaned out and retimbered by Mr. Rabe for the purpose of opening up new ground at this level. 55 tons of ore was broken out and treated by the owners for a return of 32 oz. 7 dwt. of gold, valued at £87 1s. 1d. An average of six men was employed.

Ethel Reefs.—This property was surrendered by the Ethel Reefs Company in the early part of the year, and since then a portion of the ground has again been taken up, but only a limited

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Erecting one of the large Elevating Wheels at the Waihi Gold-mining Company's 90-stamp Mill, Waihi.

Erection of Elevating Wheels, Settlers, and Solution Tanks at the Waihi Gold-mining Company's 90-stamp Mill, Waihi.

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amount of work has been done by the present party. Two men were employed, who treated 4 tons of quartz for a return of 3 oz. 11 dwt. of gold, valued at £8 17s. 6d.

Prospecting-work has also been carried on in the Summer Hill and Victory Claims, Hape Creek, but no payable returns obtained.

Thames Special.—This claim was forfeited and taken up by another party, who applied for protection to enable them to raise money to work the ground. Little or no work has been done on this ground for some time past.

May Queen Extended, Karaka Creek.—During the past twelve months the work in this mine was chiefly confined to the extension of the south crosscut to intersect the reef. After driving 32 ft. the reef was met with, and in cutting through it strong dabs of gold were frequently seen through the quartz. This encouraged the company to drive east and west on the lode (which averages 10 in. in width) to prove its value. After driving 125 ft. east and 57 ft. west, and not meeting with as good ore as that obtained at the end of the crosscut, they decided to stope out some of the reef over the back of the level; and 103 tons was broken out and treated for 53 oz. 14 dwt., valued at £150 8s. 8d. As this did not prove payable, or anything like as good as anticipated, all work on this reef was suspended for the time being, and the crosscut extended for the purpose of intersecting the Odd Fellows lode. This is in a distance of 96 ft., and the lode is expected to be met with at any time. An average of four men has been employed at this mine.

Thames Talisman.—Operations in this mine have been of a prospecting nature, the principal work being the extension of the low level to intersect the reef worked in the early days by the Grand Trunk Company from a shaft. Up to the present they have failed to pick up the reef. A total of 411 ft. has been driven; 143 ft. was driven on a reef 18 in. in thickness, in which a colour of gold could be occasionally seen in breaking out the quartz, but the reef was heaved by a break to one side. The drive was then directed to a point immediately underneath the old shaft a distance of 175 ft., but, as the Grand Trunk reef was not met with where expected, crosscutting into the walls is proceeding with a view to finding it before rising is commenced to connect with the shaft. Four men have been employed.

Gloucester.—This property is at present under option to a Glasgow syndicate, who have done a fair amount of work in prospecting and testing on the various reefs, more especially in the Gloucester Extended section, where encouraging prospects are said to have been met with. Further development is required before the value of the property can be ascertained. In the Gloucester section a party of tributers are engaged in driving and stoping on Cowling's leader, from which good payable ore had previously been obtained, 10 tons of quartz being broken out and treated for a return of 17 oz. 18 dwt. of gold, valued at £43 15s. An average of six men was employed on this property.

Claremont.—This claim of one man's ground is still owned by George Bryant, who consistently obtains highly remunerative returns of gold from a very small quantity of ore treated and a limited amount of work done. During the year 3 cwt. 2 qr. 8 lb. of specimen stone was treated for a return of 259 oz. 19 dwt. of gold, valued at £701 17s. 6d.; and only one man is employed.

Babydim.—This mine has been worked with two men, whose attention has been directed to driving and stoping on a leader which varies from 4 in. to 10 in. in width, and from which 20 tons of ore was broken out and treated for a return of 36 oz. 13 dwt. of gold, valued at £91 12s. 6d.

There has been little or no work done on the Thames-Hauraki, Deep Sinker, or Deep Level Consolidated Mines during the year.

May Queen-Hauraki.—Operations in this mine during the year have been solely carried on by tributers, their attention being directed to driving and stoping on the various reefs above No. 6 level in the Saxon, Cardigan, and May Queen sections, but no permanent work of any kind has been undertaken by the company. The tributers' returns show that 1,446 tons 10 cwt. of quartz was treated for 2,564 oz. 3 dwt. of gold, valued at £7,017 15s. 7d. An average of forty-six men was employed.

Victoria.—This company has done no work on their own account during the year. Seven men have been employed in working blocks of ground on tribute on various leaders from the No. 3 level to the surface in the Victoria section, and from the 70 ft. level of the Tookey section upwards, the work as a whole not having been of a remunerative character. Boring operations have been suspended for some time past on the foreshore, pending the arrival of tubing from England. When this arrives the company intends to select a new site for a borehole. 327 tons of ore was treated for the tributers for 134 oz. 17 dwt. of gold, valued at £365 11s. 7d.

Waiotahi.—This mine still continues to produce ore of a payable quality from the various leaders from the No. 3 level upwards. 1,210 tons of ore was treated during the year for 1,601 oz. of gold, valued at £4,343 19s. 1d., from which £900 was paid to the shareholders in dividends, making a total paid in dividends of £39,300. An average of fourteen men is employed.

Nonpariel.—The work in this mine for the last twelve months has been entirely carried on by tributers, who have directed their attention to operating on the Liverpool Boys' reef and the Wade leader, which is composed of reef formation, the stringers varying from ½ in. to 1 ft. in thickness. 208 tons 10 cwt. was treated, which yielded 200 oz. 3 dwt. of gold, valued at £559 14s. 6d. An average of six men was employed.

Fame and Fortune.—This mine has been principally worked by tributers during the year. The work has been mostly confined to the Balmoral section, where the hanging-wall portion of the Golden Age reef has been operated upon with a fair amount of success. The ore obtained from here is mostly composed of what is termed "general dirt." Work is also proceeding in the higher levels on Fox's and other leaders, from which at times a little picked stone is obtained, but nothing that may be termed a rich chute of ore has been met with. The company's battery has been fully employed in crushing for the public. 381 tons of ore was treated for the tributers for a return of 527 oz. of gold, valued at £1,505 16s. 2d. An average of twenty-five men has been employed.

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West Coast.—This claim is still worked by the owner, Mr. John Northey, who directs his attention to driving and stoping on small leaders in the surface levels, and from which he has broken out and treated 14 tons of quartz for a return of 96 oz. 16 dwt. of gold, valued at £242. Two men have been employed.

Ballarat Claim.—Operations were carried on in this mine by the owner, Mr. J. Britt. The work consisted of driving and sinking on a small leader, from which he obtained 9 tons of quartz, yielding 36 oz. 14 dwt. of gold, valued at £108 1s. 4d.

Prospecting operations have been carried on to a small extent in the Little Mabel, We Two, and Little Maggie Claims, but so far nothing of importance has been met with.

Kuranui-Caledonian.—This company had five men constantly employed in prospecting on the Duke's reef at the Hazelbank level. There is a considerable amount of untried ground in this portion of the mine. A distance of 163 ft. was driven on the reef; the prospects for the first 60 ft. were of an encouraging nature, as colours and dabs of gold were freely seen in the quartz in breaking it out. Three stopes were carried along the back of the level, but, unfortunately, although the reef maintained its size and appearance, no gold could be seen. Fourteen loads of quartz broken out of the reef yielded 14 oz. 11 dwt. of gold, valued at £41 6s. 10d. In addition to this, a considerable amount of work has been done on a lead adjoining at the same level, and known as Smith's lead. Eight loads of quartz treated yielded 6 oz. melted gold, valued at £16 19s. As this was not payable, the men have been removed to try a leader at No. 1 level, in the vicinity of where the "big patch" was obtained in the Caledonian section in 1870. This lead will average 2 in. in width, and as far as can be seen the country-rock is the same as where the rich gold was obtained, consequently there is every reason to believe rich stone will be found here. There has also been a large number of tributers engaged in working on various leaders in the different sections of the mine, from the No. 3 level up to the surface. The tributers crushed 585 loads for a return of 1,317 oz. 7 dwt., valued at £3,581 3s. 3d.; and the company twenty-two loads for 20 oz. 11 dwt., valued at £58 5s. 10d. An average of seven wages-men and fifty tributers was employed.

Moanataiari.—With the exception of keeping the main levels in repair, the mine has been entirely worked by tributers from the tunnel level to the surface. 1,311½ tons of ore from the various leaders was treated for a yield of 2,453 oz. 10 dwt., valued at £6,744 5s. 8d. Fifty-four tributers and three wages-men were employed.

Kuranui.—This company has done a considerable amount of work in repairing levels and opening up new ground, and have been driving for some time past on promising lodes between the Eureka and Moanataiari slides, adjacent to where very rich gold was obtained in the early days of the goldfield. The manager is very sanguine that an important discovery will be made in the locality they are at present working. 35 tons of ore was treated for 57 oz. 2 dwt. of gold, valued at £98 8s. 6d. An average of twelve men was employed.

New Whau.—This mine was under protection during the first part of the year, and since then the amount of work done has been very limited, and nothing payable was found. 6 tons of quartz was crushed for 4 oz. 1 dwt. of gold, valued at £8 16s. 11d.

New Alburnia.—Only a limited amount of work has been done on this mine during the year, and the company is in liquidation. An average of four men was employed tributing on various leaders, from which 19½ tons of quartz was treated for a return of 26 oz. 11 dwt. of gold, valued at £73 10s. 1d.

Golden Drop.—Two men have been employed on this ground, their attention being directed to driving on some small leaders in the surface levels, and from which they crushed 7 tons for 28 oz. 11 dwt. of gold, valued at £70 1s. 5d.

Tararu Gold-mine (formerly Tararu Creek).—The principal work carried on underground has been the extension of the Day Dawn crosscut at the battery level a further distance of 570 ft., making the total length 752 ft. This crosscut is 8 ft. by 8 ft., and is being driven with a view to opening up the eastern portion of the mine at the deep level, practically 700 ft. below the surface. The south drive on the Dunedin reef at the Dunedin level has been driven 185 ft. south of the fault, and the old level timbered for 200 ft. The Sunbeam workings from the battery level have been reopened to a height of 300 ft. and a connection made with the old Sunbeam workings. A new six-drill air-compressor has been installed and connections made, and an additional boiler has been purchased and placed in position. For some time past no work has been done in the mine, pending arrangements being made to raise more capital to carry out the projected works that were in progress when the mine was closed down. 200 tons of ore was treated, which yielded 35 oz. 11 dwt. of gold, valued at £83 7s. An average of twenty men was employed whilst the mine was at work.

Eclipse.—Operations in this mine during the year were principally confined to driving and stoping at and above Nos. 1 and 2 levels on the No. 1 and cross reefs. These reefs varied from 3 ft. to 8 ft. in width, and produced good payable ore for the greater part of the year; but as the payable ore became exhausted it was found necessary to stop all work in this section of the mine, and drive a low level to open up the mine at a greater depth. This should have been undertaken earlier, when the upper levels were being worked on good ore. 3,857 tons of quartz was treated at the company's battery for a return of 1,418 oz. 9 dwt. of gold, valued at £3,917 12s. 6d. An average of sixteen men was employed.

Prospecting-work has been intermittently carried on in this locality in the Argosy, Temple Bar, and Iron Cap Claims, from which small returns have been obtained, but no permanent work has been undertaken.

Puru Consolidated, Puru.—This mine was worked on tribute during the greater part of the year by Mr. G. Tettley and party, but through the block of ground becoming unpayable the tribute was given up, and since then the company has been working it on their own account, directing

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their attention to extending the No. 2 level and rising on the reef at different points over the No. 1 level. These works are meeting with a fair amount of success. 455 tons of ore was treated for 127 oz. 7 dwt. of gold, valued at £317 17s. 6d. An average of four men was employed.

Monowai Mine, Waiomo.—This mine has been steadily worked during the year, the operations being chiefly confined to driving and stoping on the reef from the No. 3 B level upwards. The reef in places is over 30 ft. wide, and has been driven on for a considerable distance at different levels, where it has been cut through to ascertain its value. Up to the present only one payable chute of ore, from 80 ft. to 150 ft. in length, has been discovered, and will be soon exhausted if some development-work is not proceeded with. The ore being of a very refractory nature, most of the values were obtained from the concentrates, which were shipped to Sydney for treatment, the balance of the bullion being obtained by the cyanide process. 4,044 tons of ore was treated for a return in value of £4,575 2s. 2d. An average of thirty-five men has been employed.

Broken Hill Mine.—Prospecting operations were carried on in this mine with from two to four men, the work being chiefly confined to driving the low level for the purpose of intersecting the Monowai reef. In the No. 1 level the No. 1 reef varies from 18 in. to 4 ft. in width, and has been driven on for a distance of 80 ft.; although the quartz is of a kindly description, and carrying a little gold, yet it is not considered payable.

A limited amount of prospecting-work has been done on the Victory and Hector McDonald Claims, situated in the Waiomo Creek, but no returns of gold from these mines have been reported during the year.

Bullion Mine, Tapu.—This mine has been worked by tributers, who have done a large amount of prospecting on various portions of the property, but the ore that was treated was obtained from the Sheridan section. 20 tons was crushed for 72 oz. 7 dwt. of gold, valued at £218. An average of eight men was employed.

Mahara Royal, Tapu.—This property (which was owned by an English company) was under protection during the first part of the year; the only work carried on was conducted by the caretaker, who treated some tailings at the battery. At the expiration of the protection no capital was forthcoming to further develop the mine, and the company decided to sell the whole of the property, which was purchased at auction by the Broken Hills Gold-mining Company, Tairua, who intended to increase their crushing plant, but before removing the twenty-stamp battery, &c., from the Mahara Royal they decided to drive a low level to develop and prove that mine at a deeper level. This is estimated to cost £500. A contract was at once let, and the work is now proceeding. The Mahara Royal Company treated 143 tons of tailings for 43 oz. 1 dwt. of gold, valued at £120 19s.

A little prospecting-work has also been carried on in the Golden Horn and other claims in this creek, but nothing of importance was discovered.

Coromandel District.

Hauraki Mine, Coromandel.—Owing to the falling-off of the gold returns during the year 1901 this mine gradually came to a standstill early in the year, and in March everything was closed down for a time. At the same time negotiations were being carried on by the London board to acquire another gold-mining property in Australia. These were finally concluded, and instructions were sent out from London with the object of transferring the winding and pumping plant from the Union Beach section of the Hauraki property over to the company's new Australian lease. Owing to some misunderstanding, only the boilers and air-compressor were taken away from the Union Beach section, while the pumping and winding engines from the Main Hauraki shaft were also dismantled and shipped away, thus entirely crippling the original property. By the time Mr. Woolmer (who was to take over the management of this and other mines in Coromandel) had arrived the whole of what may be termed the injury had been done; but, owing to a rich run of gold having been found by a party of tributers in the Bunker's Hill Mine on this company's boundary, a fresh impetus was given to mining in this part of the district, and an arrangement was arrived at whereby the Hauraki Company permitted the Bunker's Hill Company to use their main shaft for the purpose of putting in another large Cornish pump to drain the two mines. The mine above the 100 ft. level was thrown open for tributers, and a number of men took the opportunity of working under this arrangement. It is gratifying to notice that several were successful in unearthing some very rich ore, in some cases paying them handsomely for their labour. 789 tons of ore was treated for 1,340 oz. 6 dwt. of gold, valued at £4,037 3s. 11d. An average of twenty-five men was employed.

Bunker's Hill.—On the 15th August, 1902, a tribute was let to Messrs. Jamieson and Fraser, who commenced operations from the Hauraki Company's workings at the 100 ft. level on what is known as the Iona reef, specimen stone being obtained immediately work was begun. The Hauraki Company have, it appears, worked this reef on the rich chute of gold right into the Bunker's Hill ground, and which has since been found to carry through the Bunker's Hill into the Hauraki Freeholds property, a distance horizontally of 118 ft. The tribute was only let for a term of two months, but during this time the tributers won and treated 70½ tons of ore for a return of bullion of the value of £3,305 10s. 1d. Since their term expired the company has treated 13 tons of ore of the value of £1,909 0s. 10d. Operations have been confined to driving, sinking, and stoping on this lode, which will average 12 in. in thickness. Owing to the cessation of mining in this and the adjacent mines with the removal of the machinery, the mines were flooded, and operations have been considerably impeded owing to the water difficulty; but in order to cope with this the Bunker's Hill Company have purchased the pumping plant from the Blagrove's Company, and a contract has been let for the removal and erection of it on the site of the Hauraki Company's shaft, where pumping operations will be conducted. The total quantity of quartz treated from this company's mine was 83 tons for 1,693 oz. 18 dwt. of gold, valued at £5,214 10s. 10d. An average of ten men has been employed.

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Kapanga.—Work in this mine during the year has been carried on by a party of five tributers, who have directed their attention to work in the old surface levels and selecting portions of the mullock-tips, treating the ore at Scotty's battery, of which they obtained a lease. During the period under review 595 tons of dirt was treated for 213 oz. 3 dwt. of gold, valued at £571 16s. 10d. The old pumping and winding plant which has been in use on this company's shaft for a number of years is being dismantled, as it is considered that, in the event of work being again resumed to prospect the deep levels, a more up-to-date plant will be required.

Hauraki Freehold.—During the year only a limited amount of work has been done on this property (which adjoins the Bunker's Hill Mine), the operations being solely confined to prospecting-work at the surface levels; but now that gold has been obtained close up to the boundary in the Bunker's Hill ground, it is contemplated to make another effort to raise capital to unwater the mine, with a view to finding the run of gold where it runs into this property, and also to further develop the deep levels. No crushings have taken place. An average of four men has been employed.

Hauraki No. 2.—This mine has been steadily prospected with two men during the year, the work being confined to driving and rising on what is termed the "No. 2 lead," which varies from 2 in. to 8 in. in thickness. As this ground adjoins the famous Hauraki, the shareholders are hopeful that something important will yet be found. 15 tons of quartz was broken out of the leader named and treated for 4 oz. 6 dwt. of gold, valued at £12 18s.

South Kapanga.—This mine is owned by Angus McNeil, who has steadily worked the mine, an average of five men being employed. Unfortunately no payable quartz has yet been discovered, but the owner has every confidence of something rich being obtained. Two tributes have now been let at 10 per cent., on conditions that should a company be formed to work the mine the tributers will give up the ground. 5 tons of quartz was treated for 11 oz. 5 dwt. of gold, valued at £31 1s.

Kathleen Crown.—Operations were carried on in this mine on leaders at the surface levels in the early part of the year, but not being successful in finding payable ore the mine was closed down.

Mermaid Claim.—This claim, situated on the foreshore, was a portion of the Hauraki Main Lodes Mine. It was worked by Messrs. Hornibrook and Wild the greater portion of the year, their attention being directed to working the silt rubble and tailings that had collected on the beach, and which contained a fair percentage of the precious metal. The material treated is said to have paid them for their labour, but, as the payable dirt was covered over by a considerable thickness of *débris* which contained little or no gold, and was too expensive to remove, the claim was eventually given up.

Royal Oak Mine, Tokatea.—The operations in this mine for the last twelve months have been chiefly confined to the Tribute and Tokatea reefs, on which a considerable amount of work has been done. The greater part consisted in driving 1,000 ft., stoping 3,000 ft., sinking and rising, besides repairing 1,300 ft. of old levels and unwatering and renovating 160 ft. of the main shaft, which was sunk some five years ago, and has not been used for some time. This is essentially a "specimen" mine, and without hauls of specimens are frequently obtained the average quartz will not pay for winning. The present run of gold on the Tribute reef has been almost worked out, and energetic development-work is now being carried on to open up and prove the value of the large blocks of ground that are intact on both the Tribute and Tokatea reefs. Work is also now on hand for the purpose of thoroughly testing the property. This includes opening up levels, and prospecting from the surface on the top of the hill to the No. 7 level, a vertical height of 1,000 ft., but the principal work will be the opening-up of the Tokatea reef from the main shaft at the 160 ft. level. The intention is to extend this level on the reef a further distance of 500 ft. or 600 ft. in order to get under the old Bismarck Company's workings. The battery has been overhauled and improved, thereby increasing the output over 25 per cent. It is intended to crush a large quantity of low-grade ore during the winter, when water is plentiful. The water-driven air-compressing plant is of great assistance, as the battery, four rock-drills, hoist, and pump are all worked by it except in the very driest period of summer, when steam has to be used. The company's crushings consisted of 1,134 tons 1 cwt. 3 qr. 20 lb. of ore being treated for 3,761 oz. 2 dwt. of gold, valued at £9,538 0s. 6d.; and the average number of men was sixty.

Hauraki Mines (Limited).—Operations in this mine have been carried on with very indifferent success. Work has been confined to the Foot-wall leader, on which driving and stoping have been in progress. A total of 23½ tons of ore has been treated from the above-named leader for bullion, valued at £132 2s. 6d. Six men have been employed.

Harbour View.—This mine was taken up by a syndicate, who commenced operations in July last with four men, the object being to pick up and retimber the old No. 5 level and further develop what is known as the Mullocky reef, which was worked with good results in the upper levels and was driven on for a distance of 300 ft. some twenty-five years ago. After retimbering the old level 240 ft., and deviating from it in a more northerly direction for a distance of 220 ft. to cut off a sharp bend, the old level (which had been driven on the course of the reef) was again picked up and found in a state of good repair. In driving through the corner of solid ground six different leaders were cut through, all carrying a little gold. The shareholders of this venture are now sanguine that they will soon have a good payable mine opened up. Five men are employed.

West Tokatea.—Operations in this mine were confined to driving and prospecting on some small leaders in the Nos. 1 and 2 levels, which at times have produced stone of fair quality, but as the leaders are very small only a limited amount of quartz was obtained; consequently the concern did not pay and the mine was closed down, protection being granted for a term of six months. During the year 4½ tons of ore was treated for 41 oz. 10 dwt. of gold, valued at £115 15s. 5d An average of four men was employed.

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Queen of the North.—During the greater part of the year this mine was worked on tribute by A. McLean and party, their attention being directed to working on some of the small veins known to contain gold. 5 cwt. of crushing-dirt was obtained and treated for a return of 24 oz. 15 dwt. gold, valued at £66 9s. 4d. Two men were employed.

New Four-in-hand, Tokatea.—This property shows a considerable decrease in the output as compared with the previous year, the results obtained not being sufficient to enable any dividends being declared. The operations were chiefly confined to driving and stoping on the reef at the intermediate and No. 2 levels; some prospecting-work has also been carried on over other portions of the property, but up to the present nothing payable has been discovered outside the Four-in-hand reef, which varies from 1 ft. to 3 ft. in width, and from which 340 tons was broken out and treated at the company's battery for a return of 400 oz. 7 dwt. of gold, valued at £1,165 14s. 3d. Ten men have been employed.

New Tandem.—This property, which adjoins the Four-in-hand, was taken up by a syndicate. The work comprises the opening-up and prospecting of the Tandem reef, which is a strong and compact body of stone, varying from 6 in. to 18 in. in width. 3 tons of quartz and 13 lb. of picked stone were obtained from this reef, which when treated at the Four-in-hand battery gave a return of 22 oz. 2 dwt. of gold, valued at £64 2s. Two men are employed.

Sea View (late Success).—This property is at present worked on tribute by Daldy and party. The work is confined to driving and stoping on the No. 1 Success reef at the No. 2 level, which varies from 8 in. to 2 ft. in width where work is in progress, and from which 67 tons of quartz has been broken out and treated for 132 oz. of gold, valued at £382 16s. Four men have been employed.

A little prospecting-work has also been done on the New Tokatea, Forest Queen, and Lillis Claims, but nothing of importance is reported to have been discovered.

Progress-Castle Rock, Tiki.—A limited amount of work was done in this company's mine in the early part of the year, but, as the returns obtained for some time were not sufficient to pay the working-expenses, the company decided to dispose of the property. The battery of three heads of stamps, &c., was sold to the Big Beetle Company and the claims to Danby and party, who are now working the ground. 74 tons of ore was obtained and treated for 123 oz. 5 dwt. of gold, valued at £295 16s. Four men have been employed.

Prospecting-work has also been carried on in this locality in the Pukewhau, Prospero, Ternian's, and Sovereign Claims with from one to three men on each.

White Star, Cabbage Bay.—This ground has again been taken up after being unworked for several years, and a company formed for the purpose of thoroughly testing the property. Some of the shareholders who know the ground are confident it can be made to pay, and energetic operations are to be commenced immediately.

Cabbage Bay Extended.—Only one man is working on this ground. He crushed 1½ tons for 1½ oz. of gold, valued at £4 5s. 6d.

Macoronic Mine.—This company has had five men constantly employed in opening up the mine preparatory to the completion of a five-stamp battery that is in course of erection on the mine. The reefs and leaders vary in width from 2 in. to 3 ft., and are striking in a north-north-easterly direction through what appears to be a good channel of country. There has been a large amount of work done for the number of men employed on the different reefs, and a low level has been driven and connections made with the upper levels whereby the quartz will be trucked direct into the battery. The water-race and battery should be completed within the next three months, when crushing will be commenced. This will prove the value of ore in bulk, and it is to be hoped it will turn out as well as anticipated, as the shareholders deserve every success for the persistent manner in which they have carried on the work.

Kauri Freehold Gold Estates, Opitonui.—This property, on which a large amount of capital has been expended in the mine, battery, and railway, &c., has unfortunately not turned out as well as the shareholders were led to believe it would do. Operations in the mine were carried on up nearly to the end of the year, when the funds became exhausted, and, the returns obtained from the quartz crushed not being sufficient to meet the working-expenses, the whole of the work was stopped. I am informed an effort is being made to dispose of the property. The necessity for such action is not only unfortunate for the shareholders, but for the people living in this part of the district, as a large number of men have been thrown out of employment through the property turning out a failure. 16,121 tons of ore was treated at the company's mill for a return of 8,351 oz. 11 dwt. of gold, valued at £15,653 6s. 6d. This does not include the final clean-up, which will be included in the incoming year's returns. An average of 120 men was employed by this company.

Kuaotunu District.

Kuaotunu Syndicate (late Mariposa).—Operations were carried on by the owners till May last, but, as the ore obtained from the different workings was not of sufficient value to meet current expenses, and no available money being forthcoming to carry on prospecting-work to discover other payable chutes of ore, all work on behalf of the owners was stopped. Protection was then applied for and granted for six months. At the expiration of that time the mine was let on tribute to White and party (five men), who are selecting and working portions of the reef at the main adit level, which they are confident will pay. During the time the operations were carried on by the syndicate 1,565 tons of ore was broken out and treated for 680 oz. 5 dwt. of bullion, valued at £1,498 15s. 9d. An average of eight men was employed.

Waitaia.—This mine has been continuously at work during the year, with fairly good results; and although it has not reached the point where a sufficient surplus is left over to enable the directors to pay dividends, yet there is nothing unreasonable in expecting this in the near future.

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In the mine the work was confined to stoping on the Waitaia reef in the Nos. 3, 4, and 5 levels, where the reef varies from 1 ft. to 4 ft. in thickness, and is composed of good clean quartz of a payable quality. There are also a number of other leaders opened up in this company's ground at the different levels, all of which are carrying gold. Now that the company has acquired the Irene battery, those leaders will no doubt be operated on, as the manager will have a better opportunity of testing their value than he has hitherto had. 989 tons of quartz was broken out and treated for a total value of £4,094 9s. 5d. An average of twenty men was employed.

Irene.—This mine was worked by a party of tributers during the greater part of the year, their attention being directed to driving and stoping on the Irene lode, from which they obtained a total of 240 tons for a return of 299 oz. 15 dwt. of gold, valued at £649 18s. 2d. I am informed negotiations are at present proceeding between the Waitaia Company and the Irene Company with a view to the Waitaia Company purchasing and taking over the mine. It could, no doubt, be worked in conjunction with the Waitaia Mine to greater advantage than by any other party, as the battery is in close proximity to the workings of the Irene Mine.

Great Mercury.—This mine has been worked during the year by Carroll and party on tribute. The tributers have done a large amount of prospecting-work on the western side of the hill, with rather poor results. 325 tons was treated for a return of 332 oz. 3 dwt. of gold, valued at £786 2s. 6d. The proprietors intend putting in a low level on the eastern side of the Try Fluke lode. This is of very great importance to this part of the goldfield, as such a level would open up a large block of ground in this mine, and would also afford an easy means of developing the Irene and adjacent mines.

Handsworth.—This mine still continues to be worked by the owner, Louis Woodcock, who employs one wages-man. The operations are directed to stoping on the different leaders, and the quartz is treated at his small battery, which is driven by an overshot water-wheel when water is available. 88 tons 6 cwt. 3 qr. 20 lb. of ore was treated for a value of £309 4s. 9d.

Juno.—This mine has been worked on tribute by Neugent and party, the work being confined to driving and stoping on small leaders on and over the back of the main level. The quality of the ore was good enough, but, as quantity could not be obtained within a reasonable time, the money received for the work done is not sufficient for the labour entailed, and does not pay. 6 tons 5 cwt. of quartz was treated for 31 oz. 6 dwt. of gold, valued at £78 5s.

Invicta.—A portion of this ground (which was abandoned for a considerable time) was recently taken up by S. Gribble and party, who started working on a reef which had been previously cut in the No. 2 level, and from which they broke out and treated 15 tons of ore for a return of 10 oz. 4 dwt. of gold, valued at £25 9s.

A little prospecting-work has been done on the Aorere Claim, but nothing payable discovered.

Mercury Bay District.

Welcome Jack, Gumtown.—The new low level has been driven a total distance of 488 ft. The leaders, where intersected at this level, did not prove to be as good as anticipated. A rise was put up on the principal leader from the low level, and was expected to open up a payable block of ground. A winze was also sunk on the leader from the upper level. 208 tons of ore was treated from this mine, which yielded 489 oz. 13 dwt. of gold, valued at £1,164 3s. 10d. An average of ten men was employed.

Big Beetle.—Only a limited number of men have been employed in this mine during the year. The low level was extended a distance of 100 ft. to intersect the No. 2 leader underneath the point where a winze was being sunk from the upper level for the purpose of connection. The drive was then put in on the course of the leader for another 100 ft., and as there are 80 ft. of backs over this level a fair amount of crushing-dirt will be obtained when stoping is commenced. 100 ft. has been driven on the new leader cut in the crosscut, and a rise put up on it 20 ft. Two prospecting-levels have also been driven; one is in a distance of 150 ft., and the other 50 ft. The latter is on No. 1 leader, and was cut 200 ft. to the east of any previous work that had been done on this leader. Here it is from 1 ft. to 3 ft. in thickness, and gives very good prospects. A parcel of 2 tons treated from here at the Coromandel School of Mines gave a yield of 51 oz. 14 dwt. of gold, valued at £155 2s. This result being highly satisfactory, the directors decided to erect a small battery, and purchased one from the Progress-Castle Rock Mine (three stamps, &c.), which is to be removed and re-erected adjacent to the mine. Three men have been employed.

Kapowai.—Operations in this mine have been directed to putting in the No. 3 low level, which has been driven on the reef for a distance of 100 ft., 50 ft. being on the reef, which at this level is considered payable where stoping is proceeding; A little prospecting has also been done, but nothing important met with. 29 tons 10 cwt. was treated for a return of 47 oz. 16 dwt. of gold, valued at £113 8s. 11d. Four men were employed.

Golden Reefs.—During a portion of the year two men were employed in prospecting a lode formation, from which good dish-prospects of loose gold could be obtained. A test parcel of 1 ton was treated at the Kapowai battery for a yield of 13 oz. 15 dwt. of gold, valued at £32 19s. 1d.

Nil Desperandum, Mahakirau.—This was a claim held by Prescott and party, who did some work on it in the early part of the year. The leaders are small, and, the claim being situated some considerable distance from a battery, it did not pay to continue working. 30 lb. of picked stone was treated at the public battery, Coromandel, for 6 oz. of gold, valued at £15 15s. The party obtained six months' protection for the ground, but I was informed they intended to surrender it when the protection term expired.

Mahakirau Battery.—There has been no stuff treated in this battery during the year.

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GREAT BARRIER ISLAND.

Barrier Reefs.—There has only been a little prospecting-work done in this mine during the year. A surface drive was put in on the course of a disordered lode for a distance of 54 ft., on which a few feet of rising has been done, and about 40 ft. of crosscutting at and above the same surface level. Not meeting with any success, the work above stated was stopped. A crosscut drive was also put in on a claim situated about a mile and a half west of the Barrier Reefs for a distance of 260 ft. in order to prove the value of a new reef which outcrops higher up on the side of the hill. The development-work at this place was likewise stopped, as the prospects met with would not warrant further expenditure. The average number of men employed was four. The ground, water-races, &c., have been protected part of the year.

Sunbeam.—This ground has been lately taken up by Mr. Hugh McLiver, who is sanguine this mine can be made to pay. A large amount of development-work has been done in the mine, and lodes intersected and driven on, varying from 1 ft. to 3 ft. in width. It is reported that some portions of the reefs give highly payable results. 1 ton of ore was treated at the Thames School of Mines or 21 oz. of bullion, valued at £2 14s. 10d., but I am informed only a saving of 26 per cent. of the alue was obtained.

FATAL ACCIDENTS.

Name.	Name of Mine.	Cause.	Date.
James Bright ...	Mananu Company's mine, Whangamata	Killed whilst working in a stope by a piece of rock falling on him	26th May, 1902.
William Griffiths	New Zealand Crown Mines, Karangahake	Killed by falling down a quartz pass in preparing to clean it out	26th June, 1902.

Sixteen other accidents were reported to this office, six being of a serious nature. The causes were duly inquired into and reported on in the usual way to the Hon. the Minister of Mines. The other ten were only of a slight character, and such as are incidental to and connected with mining-work.

I have, &c.,
JAMES COUTTS,
Inspector of Mines.

The Under-Secretary, Mines Department, Wellington.

Mr. R. TENNENT, Inspector of Mines, Westport, to the UNDER-SECRETARY for MINES, Wellington.

SIR,— Inspector of Mines' Office, Westport, 31st March, 1903.

I have the honour to report as follows on the gold-mines in the Marlborough, Nelson, and West Coast districts for the year ended 31st December, 1902 :—

QUARTZ-MINING.

BLENHEIM.

Wellington Mine.—With the exception of rising to connect Nos. 2 and 1 levels, further operations have been at a standstill. However, some prospecting was recently resumed on McCleod's leases.

Jubilee Mine.—Mining operations have been continuous during the year, and the values recently developed in the further extension of No. 2 or low level have stimulated the management to push forward other important work, notably water-pcwer installation in place of steam for milling and berdan treatment, in order to gain increased economy in crushing and gold-saving. Water-races in connection with these works are nearing completion, and the advisability of adopting the cyanide process is under consideration.

Duke of Cornwall Syndicate.—The development so far carried out on this property comprises four surface drives through the cap of the reef, and a winze sunk on a 4 ft. average thickness of stone to a depth of 53 ft., when sinking was intercepted by a strong inflow of water.

Neville's Claim.—This claim, situated to the west of the Cornwall, is now being prospected by Tyrell and party, who have obtained favourable ore-prospects on the surface.

Baden-Powell Syndicate.—This company has abandoned the property as the result of a recent unfavourable crushing.

Just-for-Luck. — Disappointment having been the result of a recent crushing of 10 tons of stone, the property is now under twelve months' protection.

HAVELOCK.

Golden Bar.—These works are shut down and the engine removed from the Gorge Company's plant. The Havelock Prospectors' Association, having presently suspended prospecting on the ranges, are taking advantage of the dry season to strengthen their monetary position by working the creek-bed. Meantime, however, the party are hopeful of picking up the main reef, and promise to resume their search for the coveted lode from which the rock-specimens found are supposed to have originated.

Other mining in the Wakamarina Valley is confined to twelve fossickers, who make a varied living.

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COLLINGWOOD.

Golden Ridge (Taitapu Gold Estates), (James Carrol, mine-manager).—The various developments recently extended on the Ridge and Ant-hill sections of the property are now assuming important dimensions, while the gold-value raised shows a very creditable result. The property is nicely kept in all details and well ventilated. There are forty men employed.

Golden Blocks (Taitapu).—The principal developments recently carried out on this property have been confined to sinking and driving on the southern outcrops, conjointly with the ore-body now being worked on No. 2 level. Stone for milling purposes is taken from the stopes on Nos. 2 and 3 levels, rising and driving being kept in progressive order to insure output of stone, while timbering and ventilation are strictly attended to. Milling and other plant are working satisfactorily. There are twenty-seven men employed.

WESTPORT.

Red Queen, Mokihinui.—This mine, situated at an altitude of 1,600 ft., is working a leader varying in width from 6 in. to 9 in., located in hard ground. A two-stamp battery driven by water-power constitutes the milling plant.

Lady Agnes.—Peter Carlson is further prospecting this claim.

Britannia.—Attention has been lately directed to further developing the reefs on No. 2 and creek levels. Stone on the creek level is small, but a nice body 2 ft. 6 in. in width was recently cut in No. 2. Scarcity of water for motive power has been a continued source of trouble, but efforts to remedy the defect are now being made.

Stony Creek.—This company, after carrying out considerable development in prospecting and overhauling the milling plant and water-races, shut down all operations quite unexpectedly.

LYELL.

Alpine Extended.—The varied operations in connection with the ordinary working and future development of the mine have, during the past year, been carried on continuously. The milled tonnage, 2,369 tons, yielding a gold-value of £5,218, was chiefly stoped from No. 11 south, but unfortunately these stopes are now practically exhausted. No. 10 south has been further extended 91 ft. without meeting any values of importance other than a 6 in. vein of quartz near to the roof of drive; also, so far as prospecting has proved the ground in No. 7, values on that level are likewise practically nil. Probably the most important development on which the future prosperity of the mine depends is the values which deeper sinking will disclose below the main adit. Sinking is now proceeding satisfactorily to a further depth of 100 ft., but an additional 50 ft. will be completed before chambers are constructed, and crosscutting commenced therefrom. The results of this sinking will be anxiously awaited, it being the first deep sinking in the Lyell district. The workings are in good order, securely timbered, and well ventilated. Reports to date.

Tyrconnel (Kelly and party; four men).—The workings are now confined to the Italy section of the property, whilst the No. 1 and low-level tunnels have recently undergone a thorough overhaul, and have been retimbered where required. Ventilation is maintained by an effective water-blast placed in the low level.

BOATMAN'S.

Kirwan's Reward.—The ore won for milling purposes on this property is quarried from open-face cuttings, varying in thickness from 30 ft. to 40 ft. Preparatory to milling, this peculiarly intermixed formation is carefully sorted and picked, but, notwithstanding the vigilant care taken in the removal of foreign and earthy impurities, the large percentages of useless matter unnecessarily crushed tends very materially to reduce the average gold-yield as compared with the tonnage milled. Recently the mill was augmented by the installation of five additional stamps. With this additional milling-power (now fifteen stamps), coupled with the proportionately increased carrying-capacity of the aerial tramway, there should be no difficulty experienced in maintaining increased dividends, compared with the former earnings of the ten stamps, from which a gold-value of £10,267 was won from 3,423 tons of crushed stone during the year. In the commencement of the working season serious delays were experienced owing to several faces being covered up by numerous slides of *débris* brought down by the continuous heavy rain and snow-falls. The opening-out of these faces retarded operations, and work was not resumed until the 14th October,

Lady of the Lake.—A. McKenzie, having secured a prospecting right over this area, is now driving a tunnel with the object of picking up some quartz supposed to have been left many years ago. The tunnel is securely timbered.

Welcome.—Crushing was resumed on the 12th February, and has since been steadily continuous, milling the quartz as mined. By covering a lot of ground in the mine 1,781 tons of quartz was stoped, the average stoping-width being absurdly small. However, the stone produced was of good value, as the 1,776 tons crushed yielded bullion to the value of £3,492 19s. 8d., and the 1,324 tons of sands cyanided yielded bullion to the value of £1,109 17s. At the end of the year the stopes were looking very indifferent, and a continued yield of mill rock cannot be relied on.

REEFTON.

Wealth of Nations.—Owing to the impossibility of extending the workings to greater depth with the present unsatisfactory system of hoisting by water-wheel power, there is practically no change to note at the bottom of the mine as compared with the corresponding period of last year, with the exception that a winze, now being sunk from the bottom (800 ft.) level, has attained a depth of 50 ft. A crosscut has also been driven from this level to connect with the site of the new shaft. These works constitute the total developments carried on for the year. Stoping was carried on generally between the 350 ft. level and the 800 ft. or bottom level, producing 11,566 tons

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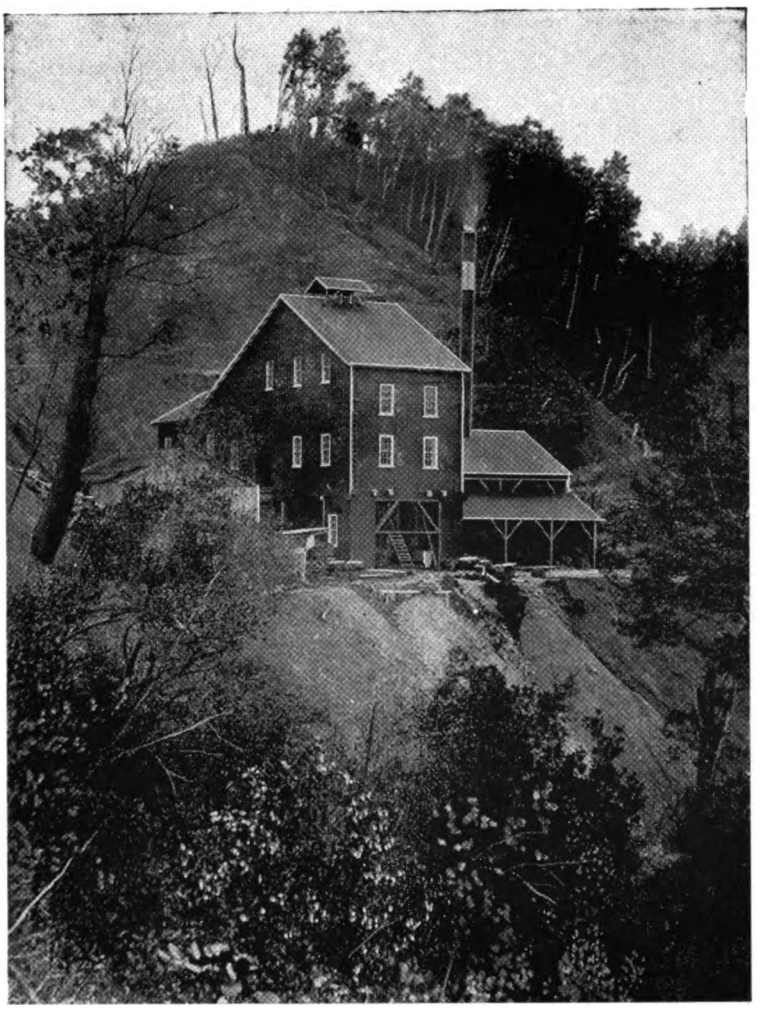
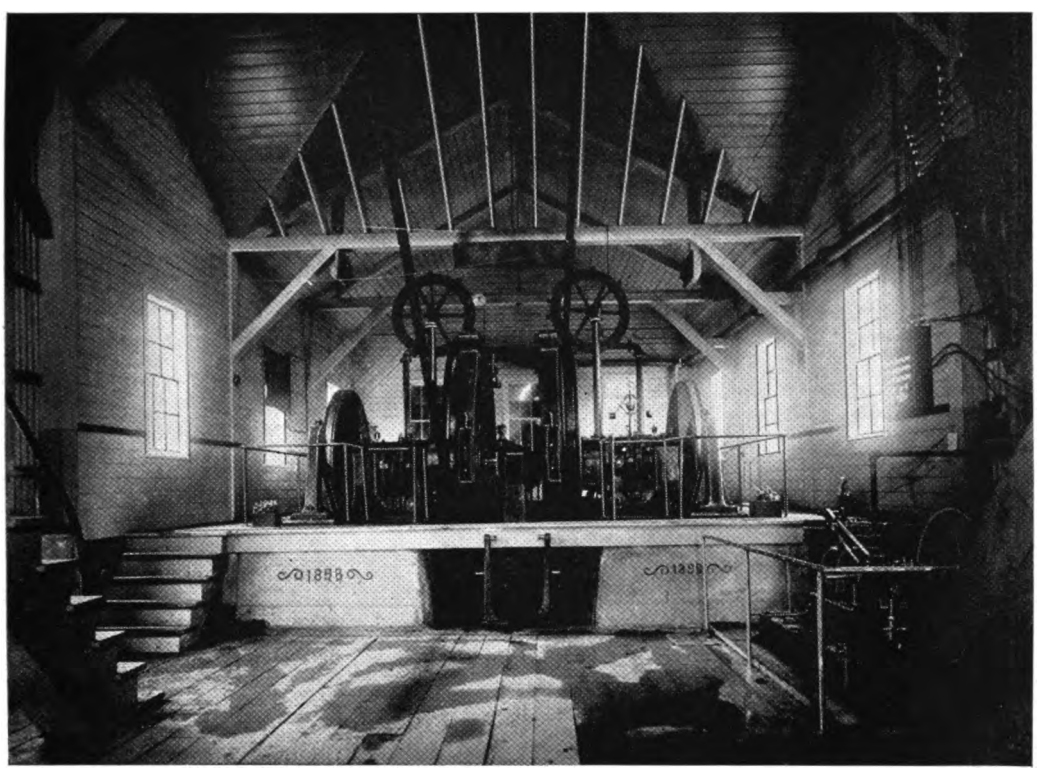


Progress Mines of New Zealand: "B" Shaft-house.



Face p. 100.] Progress Mines: Direct-acting Corliss Gear Flat-rope Hoist (Capacity, 1,800 ft.). C.—3.

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of ore, which, when crushed, yielded bullion to the value of £17,568 1s. 4d. by amalgamation, and concentrates to the value of £926 7s. 1d. Of the tonnage milled, 66·799 per cent. (7,726 tons) represented cyanide treatment, and yielded a bullion-value of £4,667 11s. 2d., or 12s. 0·993d. per ton treated. Of this amount, 3s. 1·788d. per ton was absorbed in working-costs, leaving a profit per ton treated of 8s. 11·205d. No additions of importance have been made to this plant during the year. Energetic shaft: Commencing the work of stripping, enlarging, and retimbering the shaft from the uprise which connected with the Wealth of Nations battery level, a distance of 70 ft. was completed at the beginning of 1902, while the remaining section (362 ft.) was completed satisfactorily to the surface early in March last. Previous to sinking operations being commenced, the brace of the shaft was raised 12 ft. to facilitate the engine, boiler, and head-gear installation, connection being then effected between the rock crosscut extension of the battery level and shaft on day-wages. Sinking was afterwards continued on contract, and a total depth of 837 ft. from the surface was attained at the end of the year. The shaft will probably reach the bottom level of the Wealth of Nations Mine about the middle of June. New hoisting machinery is now on order from London.

Golden Fleece.—Operations have been continuous in this mine, and a considerable amount of development-work has been done, principally on Nos. 11 and 12 levels, besides sinking the hoisting-shaft between these two levels and making the necessary connections. Generally, stoping has been carried on from the Royal tunnel down to No. 11 level, in which area a large amount of ground has been exhausted to provide the tonnage crushed, the reef formation being very irregular throughout the mine, thus making it necessary to stope a considerable area of non-productive ground in order to mine the isolated patches of quartz. The gross tonnage crushed (13,614 tons) yielded bullion to the value of £23,403 13s. 11d., besides the sulphides produced, which were sold for £1,741 18s. 10d. At the cyanide-works 9,550 tons of coarse sands, representing 70 per cent. of the total crushed, together with 880 tons of tailings from the old Venus Mine, were cyanided, yielding bullion to the value of £4,744 12s. 7d. Of this amount, 2s. 3·716d. was absorbed in working-costs, leaving a profit of 6s. 9·460d. per ton. No alterations of importance have been made in the equipment during the year, and the machinery has worked satisfactorily.

Progress Mines.—Extensive developments have been made during the year, comprising 3,283 ft. of driving and crosscutting and 795 ft. of rising and sinking, with the result that the ore-reserves of mill rock are practically the same as at the corresponding period of last year, although 56,000 tons has been mined and milled. Large bodies of low-grade rock have also been developed, which under present conditions will not pay for extraction. The principal developments have been carried on at Nos. 2, 5, 6, 8, 9, and 10 levels, whilst stoping has been extended in a general manner throughout the mine from No. 2 level downwards. With regard to deeper sinking, the shaft remains as at last report, No. 10 being the lowest level open. Probably the most interesting part of the mine-workings was confined to No. 6 level east, where a very fine ore-body was recently cut through, measuring 34 ft. from foot-wall to hanging-wall, and dipping at an angle of 30 degrees. This was being vigorously opened up by means of rock-drills driving both ways, besides uprising on stone to connect with a winze previously sunk from No. 5 level. Development on No. 9 level east has also been interesting in proving a large tonnage of high-grade stone similar in structural position to a comparatively flat coal-seam. Alterations of importance have not been made in the surface equipment, except that a new concrete foundation is built awaiting the transference of the old shaft hoisting-engine on to it. The output of quartz mined and transported by the aerial tram for reduction at the battery was 55,976 tons, yielding 21,123 oz. 8 dwt. 13 gr. of bullion by amalgamation, valued at £87,887 15s. 8d.; while 990 tons of concentrates, produced and treated by chlorination, yielded 3,269 oz. 6 dwt. 13 gr. of bullion, to the value of £13,367 0s. 2d. Treatment at the cyanide plant comprised 16,422 tons of sands exclusively taken from the battery, with the exception that some of the accumulated tailings were treated during the first five months. The gross yield from cyaniding is valued at £5,745 0s. 4d. The extraction was equal to 6s. 11·961d. per ton, of which only 2s. 8·844d. per ton was absorbed in treatment charges, leaving a profit of 4s. 3·117d. per ton. Another treatment-tank is shortly to be added to the ten that now compose the cyanide plant. The total working-cost (excluding capital and development expenditure and cyanide-works account) amounts to: Working-cost, £46,838 18s. 2d., at 16s. 8·824d. per ton; profit, £54,415 17s. 8d., at 19s. 5·311d. per ton. Cyanide-works: Working-cost, £2,247 7s. 4d., at 2s. 8·844d. per ton; profit, £3,497 13s., at 4s. 3·117d. per ton; making total cost (excluding capital expenditure) £49,086 5s. 6d., the total value yield £106,999 16s. 2d., and the total profit £57,913 10s. 8d., which may be considered as a very satisfactory balance-sheet. The efficiency of the plant has been well maintained, the only items added being an 18 ft. diameter tailings-elevator wheel, and classifying arrangements to separate the sands from the slimes. In the battery-house a strong-room has been built into the solid for the reception of amalgam, &c., while the canvas plant has been further extended by twelve new tables 10 ft. by 15 ft. long, all housed in, and a large increase is noticeable in the amount of slimes made. Seeing the mill ran the full theoretical time, *minus* 10·98 days, the milling-time may be considered exceptionally good. The total loss of time as stated includes the monthly clean-ups, daily scrapes, and incidental stoppages. A successful and prosperous year is confidently looked forward to for 1903.

Keep-it-Dark.—The mining and development operations so far carried out on this property have been continuous and successful. The output gave an ore-production of 11,405 tons for milling and cyanide extraction, the stone being stoped chiefly from Nos. 2 and 3 levels. These stopes are practically exhausted, with the exception of a parcel of low-grade ore located near the western extremity of No. 3. In extending deeper-level development in the main shaft, sinking has been successfully completed from Nos. 3 to 5 levels to a further depth of 300 ft., and suitable chambers

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constructed at both levels. Commencing crosscutting from No. 4 chamber, the reef was intersected at 295 ft. and driven on for a distance of 150 ft., the lode varying in width from 4 ft. to 18 ft., with promise of favourable results. Connection being effected with the winze previously sunk from No. 3, natural ventilation is maintained, and driving northward is now proceeding on line of reef. A strongly defined ore-body has since been intersected in No. 5 at 323 ft. from the shaft The stone milled (11,405 tons) yielded 2,392 oz. of melted gold, valued at £9,607, which shows an average yield of 4 dwt. 4·5 gr. per ton, while the cost of milling shows a fraction over 2s. 5d. per ton. Cyanide plant: The alterations effected in elevating and conveying the tailings directly to the newly erected settling-tanks prior to leaching provide a more successful process of percolation, the coarser and finer sands being more uniformly mixed. Comparing the tonnage milled, extraction of cyanide yielded 1,408 oz. 19 dwt. 3 gr. of bullion, valued at £4,210 9s. 10d.; while the extraction computed on the tonnage treated is equal to 7s. 4·5d. per ton, and, allowing 3s. 9d. per ton for labour, chemicals, and other perishable materials, a profit of 3s. 5d. per ton is shown.

New Inkerman.—The operations by the present company have so far (for a period of some five years or thereabouts) consisted of crosscutting, driving, sinking, and rising, with the object of thoroughly proving the existence or otherwise, as well as the extent, of payable reefs over a considerable area of ground before erecting a large new battery plant. The work for the year consisted of 1,938 ft. of driving, &c., and this has opened up a continuous reef, which is found to vary from 3 ft. to 37½ ft. in width, with variable values, and estimated to have exposed (approximately) 20,000 tons of milling-stone. To meet the present requirements and test the values of the stone developed in the mine, fifteen stamps of the old thirty-stamp mill are being thoroughly overhauled and put in order, while Frue vanners and cyanide plant are being installed. Crushing is expected to commence early in June.

Industry Mine.—This property was opened east of the Big River Road, Merrijigs, in view of picking up a reef the outcrop of which was partially exposed in the bed of a small hillside creek. Prior to values or position of reef being actually determined, a crosscut, intersecting a thin coal-seam, pierced the track of reef about 300 ft. from day. Extending the drive northward, the line of main reef was positively cut off by an abrupt displacement. Rising was then effected to the surface to maintain ventilation, when further prospecting was continued without promise of definite results. The stone mined and milled from the various developments was 182 tons, yielding a gold-value of £82 16s. As a result of this crushing, operations were suspended for several months, but two miners have since resumed prospecting.

New Scotia.—Regarding the development of the Scotia and Gallant properties, the various drivings, risings, and sinkings—confined exclusively to determining the position and extent of the Gallant block—have so far not met with the success at first anticipated. The working-conditions are satisfactory, and the plant is in good order.

Victoria and Inglewood.—After a lapse of several years, Mr. P. N. Kingswell, of Reefton, recently acquired all mining rights and privileges to mine and further extend the development of the property. It would appear from past working that the old company confined operations chiefly to the upper reaches of the reef, which yielded exceedingly rich values. The general contour of the country and the original working being practically known to Mr. Kingswell, he is making energetic efforts to prove the continuation of the lode on lower levels; but, according to the prospects so far available, promise of success is not encouraging.

Big River.—This company, after a period of unsuccessful prospecting on the upper levels during the year 1901, ultimately decided to sink the shaft a further depth of 100 ft., making the total depth from the cap of the hill 1,090 ft. Crosscutting has been extended for considerable distances in the bottom levels, but so far as prospects go there is nothing encouraging yet met with.

Last Chance.—Morris and Fleming are working very successfully in a newly opened section of the claim. The leader shows gold freely, and, although a crushing of the new ground has not yet been made, the party is hopeful of satisfactory results. This ground is securely timbered.

Golden Lead.—There is nothing of importance to note. Two men are taking a leading stope on No. 3 level. Great care is taken to secure the ground thoroughly as stoping proceeds.

Paparoa Ranges.

Garden Gully.—The No. 3 or low-level tunnel has been driven on a uniform grade for a distance of 532 ft., intersecting a reef 12 ft. in thickness, from which a large body of water is given off freely. After the reef is opened out sufficiently rise communication will be made with Nos. 2 and 1 levels, comprising a vertical height of 240 ft. to the surface. A suitable battery-site and all water (available for motive power) in the district have been acquired.

Mount Paparoa.—This company (formerly Crœsus, Paparoa) have carried out extensive works exclusively in developing the lower levels of the lode. A strong ore-body was intersected recently, and driven on for a considerable distance, but battery values have not yet been determined.

Taffy.—Owing to the unpayble results won from this property on day-wages, work has been suspended for several months, but satisfactory earnings are now being made on tribute.

General Remarks.

Compared with the previous year, the statistical returns from quartz-mining for 1902 show an increase of £5,199 2s. 1d., while the gross earnings of the Progress Mines and Consolidated Goldfields of New Zealand for the same period increased by £7,613 3s. 6d. Concerning the prospects of the Reefton and Lyell districts, the principal item of mining interest, and one likely to affect the local community generally, is probably the deeper-level sinkings. These sinkings, so far as

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development has proved the deeper strata, give very encouraging promise in respect to values and dimensions of lodes. Regarding the New Inkerman Mines, much interest is taken in the tests of actual values on a commercial scale, and it is to be sincerely hoped that these will prove satisfactory in every respect, and not only reward the company for the great enterprise shown, but prove a source of steady employment to a considerable number of men for several years to come.

There have been no fatal accidents during the year.

HYDRAULIC AND ALLUVIAL MINING.

Mahakipawa.

King Solomon Gold Syndicate.—Since reconstruction of the syndicate the water-power and other important surface arrangements have undergone extensive alteration and improvement, the object being to unwater the Golden Gate shaft after a stand of several years. Notice, however, was recently received by telegraph that drainage and ventilation had been satisfactorily effected, and the work of clearing out the main level was steadily proceeding. Should the syndicate be successful in picking up the old lead formerly worked a nice parcel of gold is likely to be unearthed.

Wakamarina Gorge Claim.—Charles Dimante is acting as caretaker. The prospects of further operation on this claim are practically nil.

Ericon Hydraulic Sluicing Company.—Nothing further has been done on this property during the year.

The terraces and river-beds contribute a living to twelve local miners.

Takaka.

Takaka Hydraulic Sluicing Company (Charles Campbell, manager).—Operations in connection with the progressive working of this claim continue to show satisfactory results, and the various important works connected therewith in the extension of fluming and pipe-line construction are kept steadily advancing. There are fourteen men employed.

Upper Anatoki.—The few prospectors along this valley are very anxious to have a road made, as under the present conditions provisions and mining materials have to be carried four miles and a half. The returns are considered sufficient to warrant better facilities.

Bartlett's Creek.—Quite a revival in mining centres has recently sprung up in this once-noted goldfield, and a party of eight have decided to prove the deeper level auriferous deposits. A shaft is sunk with promise of satisfactory results, but, on account of excessive water, mining is presently suspended pending the erection of steam-pumps. Local interest seems to be hopeful of the venture, and several shepherding parties have taken up claims awaiting further prospecting.

In the Onamalutu district Mr. Chaffe is boring on behalf of an Australian syndicate; also, on the tributaries of the Mahakipawa there are nine men working with varied results.

Collingwood.

Parapara Hydraulic Sluicing Company (James Barrett, mining manager).—Hydraulic sluicing has been continuously and energetically pushed on at the faces opened recently in the Glengoyle and Glenmutchkin districts, but the much-felt scarcity of water during the dry season has tended to seriously impede the progress of operations. As a matter of fact, in the Parapara, as in other similar properties, scarcity of water and of gold are synonymous terms. The difficulty is greatly accentuated by the peculiar geological structure of the country, which has been much disturbed and broken up by natural movement. Hence, water in quantity is an essential requirement in order to remove in volume the excessive overburden in which the auriferous deposits are found imbedded in pockets and crevices underlying the crushed formations. Notwithstanding the difficulties contended against, the returns for the past year are considered very favourable.

Quartz Ranges.—This property is now under the supervision of two caretakers.

Rocky River.—There has been no further effort made to reopen any of the mining properties in this district.

Slate River Sluicing Company (Charles Matthews, manager).—The progressive development of sluicing operations continues to be much hampered owing to the inefficient water-supply, notwithstanding the heavy expenditure recently incurred in building large conservation-works. Further steps are now proceeding to improve this defect. To effectually drain the working-face a low-level tail-race tunnel 200 ft. in length is under construction.

Karamea district was not visited.

Westport.

Old Diggings.—Further reference to this property is needless, as operations have been abandoned over two years.

German Creek and its tributaries continue to afford employment to twenty-two miners. Systems of working and results are variable, however.

Greenhill Sluicing Company, Fairdown.—This property has been shut down during the year.

Waimangaroa River.—There are five parties tunnelling the banks of the river with varied success. Shildon and party's claim was under protection for six months.

Golden Basin Prospecting Association.—This subsidised prospecting-tunnel has been driven a total distance of 1,442 ft., but in consequence of excessive water in the face the association has meantime suspended driving pending an increase of subsidy.

Bradshaw's Terrace.—E. Gillow has three men working on an extended claim, and three on a licensed holding.

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Halligan and Party.—Outside the ordinary sluicing and elevating operations, which have been continuous, there is little subject-matter of interest to report.

Shamrock Claim.—This property continues to be shut down.

Addison's Flat.—Messrs. Gould, Moran, and Carmody and parties continue to win very satisfactory results.

Virgin Flat Gold-mining Company.—This company has been liquidated, and a private party has taken over the property.

Golden Sand.—Another effort was made in the beginning of the year to further proceed with operations, but, values failing to meet expectations, utter collapse followed.

Charleston.

Powell's Sluicing and Elevating Claim.—In connection with the treatment of these black-sand deposits, a party of eight men are constantly employed, whilst a pipe-line 30 chains in length is under construction to extend operations further northward.

Murchison.

In the Glenroy, Horse Terrace, and Matakitaki districts there are thirty-four Europeans and an equal number of Chinese working in small parties, who make average earnings.

Six-mile Terrace.—In connection with the development of this property there are twelve men presently employed in tail-race and water-race construction.

Neville and Perkins's Newton Flat Sluicing and Elevating Company.—These works are now effectually completed on a large scale, and sluicing is being actively carried on.

Boatman's.

Alluvial mining is practically confined to a few old fossickers. The A1 and Reeves's Proprietary dredges are the chief sources of employment in the district.

Grey Valley.

Blackwater.—In accordance with the active developments under operation, a tone of activity is noticeable both among the Europeans and Chinese. The mining population averages sixty-three Europeans and sixty Chinese.

In the Ahaura River, Orwell Creek, and Callaghan's Creek, alluvial mining is practically confined to the Chinese.

Red Jack's and Kangaroo Creeks afford employment to twelve Europeans and thirty-six Chinese.

Upper Blackball Creek.—There are two parties of two men each hydraulic sluicing on the terraces, and when the water is low six parties of two men each find employment ground-sluicing in the bed of the creek.

Grey Valley Sluicing Company.—This energetic company push on their operations effectively and successfully. Water-races and plant are well maintained.

Great Public Company (C. Morgan, manager).—This company employ ten men on the various works. The water-race works are in good order.

The Montgomery Terrace Company are actively pushing on the development of their property.

In the Upper Blackball there are eleven men sluicing on various claims.

No Town Creek and tributaries furnish employment to seventy Europeans and thirty Chinese.

Barrytown district was not visited.

Kumara.

The sludge-channels and deep levels connected with the various mining properties were duly inspected, and the maintenance of same found efficient and in good working condition. Kelly's Terrace drainage-tunnel and ladder-ways were recently overhauled, and, where required, timbering was effectively replaced. The race is now in an effective state of drainage, but development of the areas drained cannot be said to be urgently pushed.

Waimea Hydraulic Sluicing and Elevating Company. — The newly erected sluicing and elevating installation is working satisfactorily, and the returns so far obtained are considered favourable. There are seven men employed.

Wheel of Fortune.—Recently the various important works connected with the development of this property have undergone extensive improvements and alterations, both in mechanical appliances and increased water-supply. The auriferous gravels are raised by two bucket-elevators, 95 ft. in length, with a lifting-capacity equal to 50 cubic yards per hour, while the water-race from Lake Mudgie is capable of supplying thirty-six sluice-heads at a head-pressure of 60 lb.

Hokitika.

Humphrey's Gully.—The extensive water scheme from the upper reaches of the Arahura River and its tributaries being now completed on very extensive lines, three nozzles have been operating continuously night and day, on faces 300 ft. in depth, during the greater part of the year. Light is efficiently furnished from electric installation, while each face is provided with powerful hydraulic winches for the removal of roots and other heavy *débris*.

Craig's Freehold.—This property is opened and worked by three responsible parties of tributers, employing four, five, and six men respectively. The consecutive workings are securely timbered and well ventilated throughout.

University Reserve.—James Perry and party are clearing out an old creek-bed.

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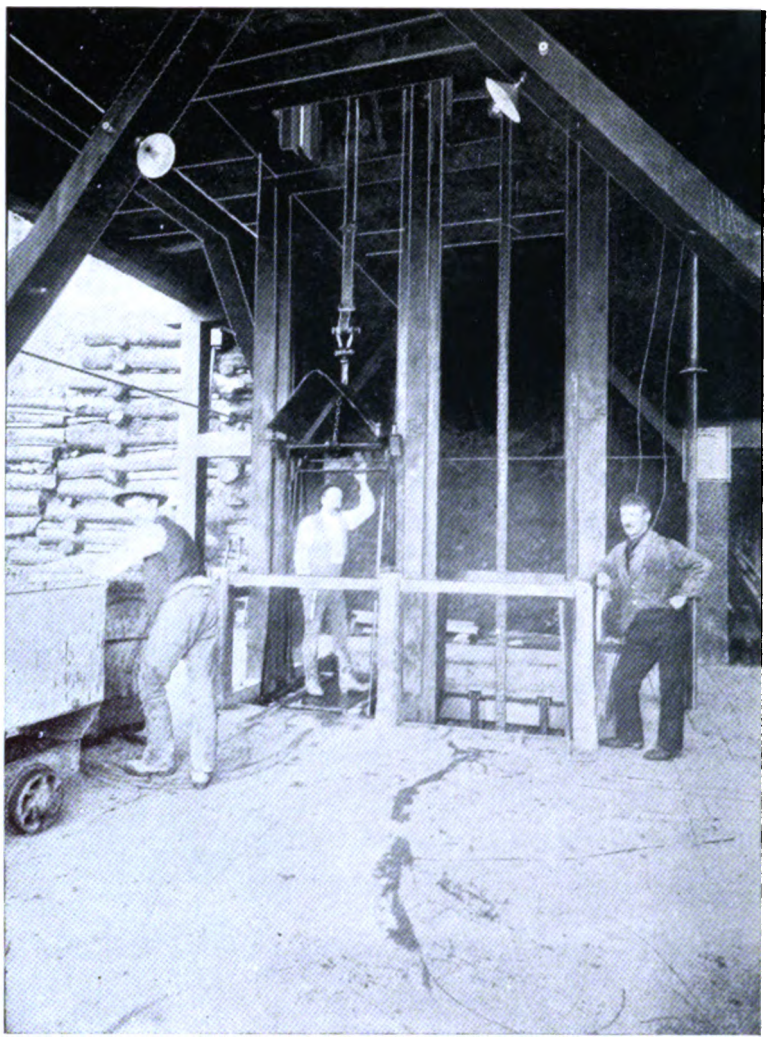
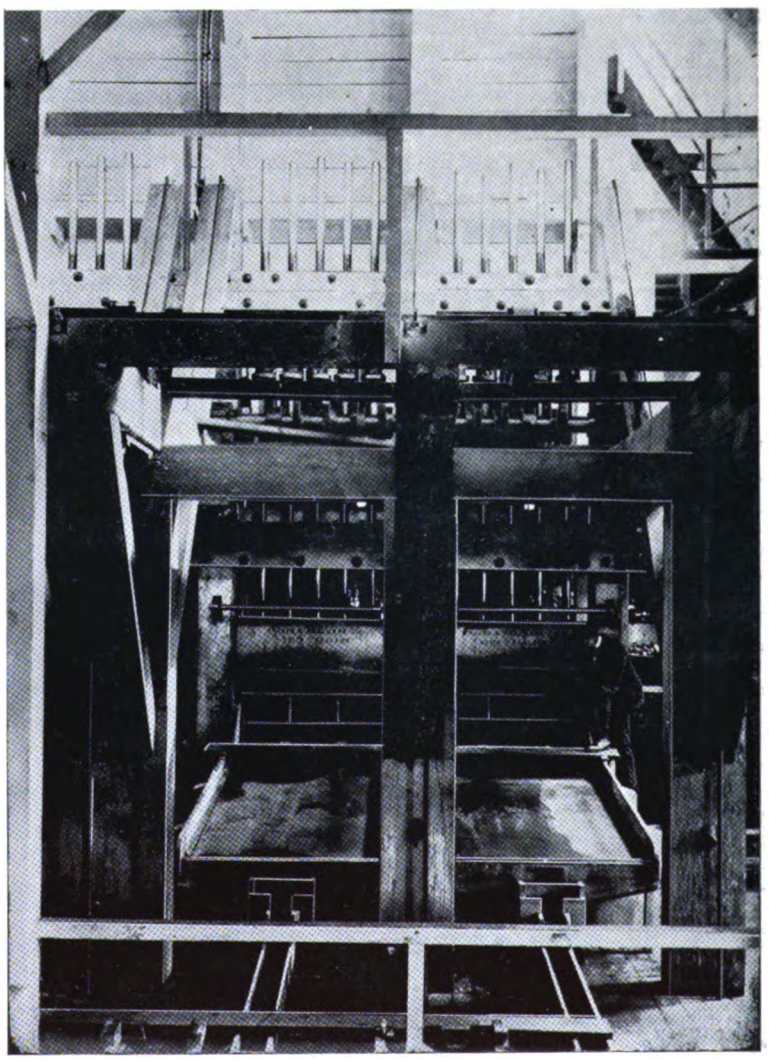


"B" Shaft-cage about to descend.



Face p. 105.] Progress Mines 65-stamp Battery: View of Ten Stamps. C.—3.

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Argyle Syndicate.—The continuation of operations on this lead—formerly worked on Maori Reserve—was suspended on account of some local difference, but the syndicate having made fresh arrangements with the Native agent the arrangements for the new tenure are nearing completion, and regular washings are anticipated to commence about the beginning of the year.

Ross.

Mont d'Or.—Other than the ordinary routine of continuous sluicing and carrying forward the various pipe-lines and other essentials on the face there is nothing to report. Recent devices in gold-saving have not yet been seriously considered.

South Bank, Mikonui River.—Messrs. Salmon and Nelson having acquired mining rights to prospect the black-sand leads of the south bank, Mikonui River, are now erecting machinery calculated to test the values and depths of the deposits. If successful in the venture, machinery will be erected to treat the deposits exhaustively.

Okarito.

Omarua District.—During the wet season there are three parties of six men making fair wages in the terraces, water being available only in heavy rainfalls.

Five-mile and Waikukupu beaches have been exceptionally favourable for the beach-combers during the latter end of the year, as the increased quantity of sands exposed by the heavy action of the sea has been somewhat phenomenal. Similar conditions are also experienced in Bruce Bay.

Duffer's Creek.—Bamford's, Carther's, and Gladon's are the only parties working—six men in all; whilst George McArthur is prospecting in the back ranges on Government subsidy.

Wataroa River.—There are only six miners working on this creek, earning a weekly average wage of £2.

Waiho River furnishes employment to six parties of two and three men, who earn fair wages during spells of dry weather.

Taylor, Watson, and party are driving a drainage-tunnel to unwater their shaft.

DREDGING.

Although the dredging industry may be rightly said to be only comparatively emerging from the past wild speculative depression to the position of a more promising legitimate industry, yet even under present conditions there is a tendency in which further indulgence in speculation may effect still greater disaster. But if dredging is to enjoy a season of progressive prosperity judicious management combined with largely increased efficiency in dredge-construction and gold-saving appliances must be regarded as essential factors in building up industrial development. If the auriferous deposits peculiar to the West Coast river-beds and flats are to be properly treated as repositories of submerged wealth, the applied skill of the mining and of the mechanical engineer must act conjointly so as to effect one common and coveted object. Unhappily, for past results shareholders are largely to blame, for, notwithstanding the payable and uniform returns recently maintained by some of our best regulated dredges there are other monetary conditions worthy of consideration before dredging may be regarded as a lucrative and safe commercial investment. Regarding the ruinous stoppages caused by breakage of machinery, &c., it is a fact that not a few of these accidents are easily traceable to careless and unsystematic inspection of the working parts either by the dredgemaster or other person responsible. Now that legislation has enacted that every dredgemaster on deep and swift-flowing rivers shall be the holder of a certificate of competency, it is desirable that a closer inspection of working parts and safety appliances should be compulsory and reported upon daily, such report being recorded in a book to be kept on the dredge for that purpose and signed by the person reporting.

It is to be regretted that seven accidents, four of them fatal, reported from this district were clearly due to rashness and carelessness on the part of each of the persons injured.

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Working Dredges Inspected.

Name and Situation of Dredge.	Owners.	Dredgemaster.	Remarks.
Marlborough.			
Golden Point	Golden Point Dredging Co. (Ltd.)	W. D. Turnbull	Strict compliance with the rules is observed on this dredge.
Aorere River and Tributaries.			
Golden Bay	Golden Bay Gold-dredging Co. (Ltd.)	W. H. Kitto	A boat is wanted owing to the other being crushed a few days prior to inspection.
Kaituna River	Kaituna River Gold-dredging Co. (Ltd.)	George Lee	Dredge fairly well equipped.
Aorere River	Aorere River Gold-dredging Co. (Ltd.)	Not yet appointed	Machinery and other works nearing completion when visited.
Buller River and Tributaries.			
Waimangaroa	Waimangaroa River Gold-dredging Co. (Ltd.)	W. McKenzie	Fencing of driving-belts required.
Old Diggings	Old Diggings Gold-dredging Co. (Ltd.)	A. G. Skilton	Not visited, owing to dredge standing greater part of the year.
Rocklands	Rocklands Beach Gold-dredging Co. (Ltd.)	W. J. Inwood	Regulations are strictly carried out on this dredge.
Premier	Premier Buller Gold-dredging Co. (Ltd.)	Alfred Smith	Not visited.
Welcome	Welcome Gold-dredging Co. (Ltd.)	C. G. Morel	Handrail on gangway over well-hole and bow fencing required.
Buller Junction	Buller Junction Gold-dredging Co. (Ltd.)	Smith Smeaton	This dredge is fully equipped.
Mokoia	Mokoia Gold-dredging Co. (Ltd.)	W. L. Crookston	Regulation requirements are strictly attended to.
Feddersen's	Feddersen Gold-dredging Co. (Ltd.)	Peter McVicar	Machinery and other equipments nearing completion when visited.
Fern Flat	Fern Flat Proprietary (Ltd.)	R. Liddicoat	Rules posted 9/9/02.
Amikitia	Amikitia Gold-dredging Co. (Ltd.)	T. Warne	Rules posted 9/9/02. Dredge not then completed.
Kohikohi	Kohikohi Gold-dredging Co. (Ltd.)	"	This dredge is undergoing a thorough overhaul.
A1 dredge	A1 Gold-dredging Co. (Ltd.)	A. Thomson	Gangway over well-hole, also light line and boat-hook in boat, required.
Grey River and Tributaries.			
Blackwater	Blackwater Gold-dredging Co. (Ltd.)	M. C. Criff	Shafting of elevators require covering, and fencing at bows.
Lagoon	Greymouth Lagoons Gold-dredging Co. (No Liability)	A. Crumpton	Regulations fully complied with, except some minor details.
Watterson's Ahaura	Watterson's-Ahaura Gold-dredging Co. (Ltd.)	Louis Morel	Watterson's: Machinery still lying on bank. Ahaura: Regulations fairly well complied with.
Erickson's Reward	Erickson's Reward Gold-dredging Co. (Ltd.)	W. Clayton	Gangway across well, railing around hatchway and sleeve on engine-shaft wanted.
Daylight	Daylight Gold-dredging Co. (Ltd.)		Pontoons afloat ready for machinery.
Victory	Victory Gold-dredging Co. (Ltd.)	G. Cunningham	Fencing machinery and movable gangway to bank required.
Trafalgar	Trafalgar Gold-dredging Co. (Ltd.)	Andrew Dalziel	Requirements fairly complied with.
Nelson Creek	Nelson Creek Gold-dredging Co. (Ltd.)	A. R. Edmonds	The requirements of the Act are strictly carried out on this dredge.
Pactolus Nos. 1 and 2	Pactolus Gold-dredging Co. (Ltd.)	James Cowan	Not visited, owing to flooded state of river.
Aldinga	Aldinga Gold-dredging Co. (Ltd.)	N. K. Sligo	Regulations well complied with, except fencing at well-hole.
Garibaldi	Garibaldi Gold-dredging Co. (Ltd.)		Boat and safety appliances not yet on the ground.
Moonlight	Moonlight Gold-dredging Co. (Ltd.)		Pontoons not yet completed.
Callaghan's Creek	Callaghan's Creek Gold-dredging Co. (Ltd.)	David Clark	Well-hole and gangway over same require fencing.
Red Jack's	Red Jack's Gold-dredging Co. (Ltd.)	J. C. Nicholson	Boat-hooks and light lines required.
No Town	No Town Creek Gold-dredging Co. (Ltd.)	A. Cowan	Life-buoy, light line, and boat-hook required near bow, and gangway over well-hole.
North Beach	North Beach Gold-dredging Co. (Ltd.)	James Gilroy	Life-buoys require renewing, and small life-boat wanted.
Mosquito	Mosquito Gold-dredging Co. (Ltd.)	A. E. Morel	Gangway over well-hole and life-saving appliances wanted.
Westland Rivers and Tributaries.			
Maori King	Maori King Gold-dredging Co. (Ltd.)	A. Cowie	A light boat is required previous to commencing work.
Cornwall	Cornwall Gold-dredging Co. (Ltd.)	George Wilson	Sleeve on engine-shaft and railing on gangway wanted.
Leviathan Freehold	Leviathan Freehold Gold-dredging Co. (Ltd.)	H. C. Greene	Was being thoroughly overhauled when visited.
Leviathan	Leviathan Gold-dredging Co. (Ltd.)	D. Sutherland	Was undergoing extensive repairs when visited.
Stony and Mosquito	Stony and Mosquito Leads Gold-dredging Co. (Ltd.)	G. G. McAlpine	Light boat required, also other safety appliances.
Greenstone Junction	Greenstone Junction Gold-dredging Co. (Ltd.)	James Bennet	Conditions satisfactory, except handrail on elevator.
Greenstone-Three-mile	Greenstone-Three-mile Gold-dredging Co. (Ltd.)	J. G. Donaldson	Boat-hooks and light lines required.
Reeves's Proprietary	Reeves's Proprietary Gold-dredging Co. (Ltd.)	Robert Scott	Boat-hooks and light line required, and movable gangway.
Greenstone Creek	Greenstone Creek Gold-dredging Co. (Ltd.)	J. F. Cornish	This dredge was in a very dilapidated condition.
New Greenstone	New Greenstone Gold-dredging Co. (Ltd.)	A. Harris	Regulations fairly well complied with, except boat, which is promised.
Stafford-Waimea	Stafford-Waimea Gold-dredging Co. (Ltd.)	F. D. Sutherland	Dredge undergoing extensive repairs.
Woodstock	Woodstock Gold-dredging Co. (Ltd.)	J. W. Cox	Fencing the man-hole leading to pump required; standing at time of a later visit.
Commissioners' Flat	Commissioners' Flat Gold dredging Co. (Ltd.)	W. G. Mouat	Standing when last visited.
Day Dawn	Ross-Day Dawn Gold-dredging Co. (Ltd.)		Pontoons floated, and machinery arriving from Greymouth.
Prince of Wales	Prince of Wales Gold-dredging Co. (Ltd.)	J. Sunderland	Everything in good working condition.
Kohinoor	Kohinoor Gold-dredging Co. (Ltd.)	D. C. McMath	Boat-hooks and rail on gangway required.
Wanganui-Wataroa	Fergus McLeod		29/11/02. Portion of timber and machinery on ground for erection of dredge.
Shellback	Shellback Gold-dredging Co. (Ltd.)	B. Naylor	Regulations fairly well attended to.

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ACCIDENTS AND FATALITIES.

QUARTZ-MINES.

New Inkerman Mine.—(15/2/1902): James Woodward sustained fracture of shinbone by fall of mullock.

Progress Mines.—(4/7/1902): Sydney Kirby sustained two broken ribs and amputation of two toes by piece of timber falling down shaft.

Wealth of Nations Cyanide-works.—(28/8/1902): Eric Castles sustained fracture of thigh-bone and double fracture of right arm by being caught and carried round shafting.

HYDRAULIC AND ALLUVIAL MINES.

Quartz Ranges.—(24/7/1902): James Fisher, caretaker, sustained fracture of the skull.

DREDGES.

Kohinoor.—(17/4/1902): Thomas Christian, engine-driver, was drowned while boating firewood. Verdict, "Accidentally drowned."

Shellback.—(15/5/1902): John Martin Olsen, cadet, was drowned while boating firewood. Verdict, "Accidentally drowned."

Welcome.—(3/6/1902): George Jones, engine-driver, missed his footing while stepping off the pontoons into the coaling-boat, and was drowned. Verdict, "Accidentally drowned."

Buller Junction.—(27/6/1902): Harry Findlayson, engine-driver, was drowned while boating coal. Body not yet recovered.

Pride of Marlborough.—(12/9/1902): One of the employees lost a finger.

Premier.—(20/9/1902): Thomas Powick, engine-driver, lost two fingers whilst oiling the engines in motion.

There was another minor accident during the construction of the Feddersen dredge.

I have, &c.,

R. TENNENT,

The Under-Secretary, Mines Department, Wellington. Inspector of Mines.

Mr. E. R. GREEN, Inspector of Mines, Dunedin, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,—

I have the honour to transmit the accompanying reports on the quartz-mines, hydraulic sluicing and alluvial mines, and gold-dredges in the Otago and Southland Districts for the year ending the 31st December, 1902:—

QUARTZ-MINING.

SHOTOVER.

Achilles Gold-mines, Bullendale.—(19/5/1902): Nothing doing here since last May. The plant had been left in position, but no pumping done, and the water must have risen well up in the workings. Mr. Wesley Turton, the local attorney, informed me that he was hopeful that a new company would be formed to take the mine over and resume work.

Shotover Gold-mining Company, Skipper's (J. E. Davis, manager).—(19/5/1902): Operations had been suspended pending the erection of a new ten-head battery and a cyanide plant. The new plant is not yet to hand, and as the roads are locked up by frost nothing can be done until spring. A small experimental cyanide plant is being used to test tailings, but results are not yet known. Latterly work in the mine has proved that the lode lives to a greater depth than was expected, and there is also an improvement in the value of the quartz recently produced. Mr. Davis informed me that the ventilation was too bad to allow an examination of the mine being made, as, owing to the water being frozen up, the ventilating-fan could not be worked. The low-level face is at 1,350 ft. from daylight.

Considerable interest in reefing is presently being displayed in the Skipper's district.

Mr. Ring has taken up the reef behind the store at Packer's Point.

The reef outcropping on the eastern bank of the Shotover River opposite the Nugget and Cornish reef has been taken up by Mr. Cleave.

Davis and party are driving for the reef in Sawyer's Gully, and the reef known as the Crystal has also been applied for in the Warden's Court.

Reefton United Quartz-mining Company, Skipper's Point (H. Duncker, manager).—(20/5/1902): Work has been resumed by a Reefton syndicate on the old Chorazin or Jenning's reef, near Skipper's Township. The original prospectors had driven high on the reef for a distance of 40 ft. The drive proved the reef having two good walls with a width of 5 ft. of quartz in the face, carrying at the rate of 1 oz. of gold to the ton. The new party are driving on the lowest water-level obtainable, and expect to strike the reef at 100 ft., when there will be fully 100 ft. of backs to the rise. Expectations have since been realised, and the reef has been struck with 5 ft. of stone in the face, carrying payable gold. A good battery-site has been chosen on Skipper's Creek about 500 yards from the mine.

MACETOWN.

Premier-Sunrise (New Zealand) Gold-mining Company (Limited), late the New Indian Glenrock (Wynaad) Company (Limited), Macetown (W. Patton, manager).—(23/5/1902): Since last visit the main dip drive has been extended 60 ft. through hard country. Four new stopes have been opened up, and more will be opened as the dip advances. The advance work in the dip and

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stoping are carried on in conjunction, only sufficient ground being opened up ahead to enable stopes being opened up as present stopes are worked out. Payable stone runs from 1 ft. 6 in. to 3 in. in width, and depth of chute 30 ft. to 40 ft. The reef is looking more kindly in the stopes, but the dip face is hard. Air good throughout the mine, but the main return-airway through the old stoped ground is narrow and troublesome to keep open. The ventilation has been recently improved by the adoption of a new water-blast. Water under a pressure of about 50 ft. vertical is discharged through a jet having a drop of 23 ft. into the barrel in the intake level. The air is forced through 3,100 ft. length of 14 in. galvanised-iron piping. The explosives magazine is in good order. Rules posted. The main-dip timber is necessarily heavy, and averages 14 in. diameter. Lining-sets are being constantly used. Operations are now being carried on in the dip drive at a depth of 3,100 ft. measuring along the dip, or over 2,000 ft. vertical from the outcrop, and, considering that the quartz is making in body and quality, there are indications of permanency to still greater depths. Eighteen men are employed underground, and three men in the battery, which is worked eight hours per diem. The manager, Mr. William Patton, submits the following report of work accomplished in the mine during the twelve months ending the 31st December, 1902 :—

Incline: The work here has been carried out almost continuously during the year, one shift of two men being employed. During the year 135 ft. has been driven at a cost per foot of £2 6s. 2d., including all expenses. The nature of the country driven through during the greater part of the year has been favourable as compared with that driven through during the previous twelve months. There is no appearance, however, of the reef making in the face, the formation between the walls being a mixture of slate and pug. The tunnel has been continued on the same grade—1 in 4—throughout, which is well under the gold-bearing chute of stone. In addition to this 135 ft., a sump has been sunk to a depth of 12 ft., and secured with timber. During the time this work was being carried out the incline face was unavoidably stopped. The water in the mine continues to increase as a greater depth is reached. This tunnel requires constant attention to keep in working-order, as the timber does not appear to stand any time. Stoping has been carried on continuously during the year between passes Nos. 27 and 33. Three of these stopes are now almost completely worked out. The average width of the reef is about 2 ft., and varies very much in quality, but the average is fair. The country in places is much broken and expensive to work. We have carried out a considerable amount of prospecting-work during the year in the way of crosscutting into the hanging and foot walls in different places along the stopes, but were not successful in striking anything, although a distance of 20 ft. was reached in some crosscuts. The country in all cases became hard towards the end of the crosscut, so that, in my opinion, the chances of striking pay ore beyond that point is very remote. There are, however, other parts of the mine where prospecting could be carried on with a reasonable chance of success, and will be attended to as soon as possible. The general appearance of the reef from No. 28 pass down to pass No. 33 is, I think, more uniform in size than we have had it for some time, and the quality has been very fair. The ventilation passage has given us a great deal of trouble during the year to keep open. The country through which it passes is all of a swelling nature, and requires attention for a distance of 3,000 ft. A large amount of timber has been used, especially in the high level, which is part of the ventilation passage. This part of the mine will always be expensive to keep open. We found in the early part of last year that the return airway was not sufficient to ventilate the present workings properly. We were therefore compelled to construct a water-blast at the entrance of the main adit, the air being carried into the mine by iron pipes for a distance of 3,100 ft. When this work was completed there was a marked improvement in the ventilation. I do not think that we could have reached a much greater depth without it. The work of disconnecting the hauling-power from the mill is now being proceeded with. Our reason for this disconnection is that during the summer, and also in the winter when the water-supply is small, we are unable to carry on the hauling and crushing at the same time. We therefore decided to erect a new electric-power house, a small building about 30 ft. by 10 ft., where we will place one of our dynamos. We are also constructing a pressure-pipe line from the power-house to a reservoir, which will soon be built. The pipe-line will be about 600 ft. in length, with a vertical pressure of 200 ft. This work will, no doubt, be delayed, owing to the cables and other appliances not being procurable in the colonies. Our agents were therefore compelled to cable to London for the necessary material for carrying out the work, which is expected to arrive in February. The mill has been kept going continuously during the year, one shift of eight hours per day being employed. The gold returns on the whole have been fully satisfactory, as the financial result for the year will show. 2,178 tons of ore was crushed for a yield of 1,752 oz. 1 dwt. 23 gr., valued at £6,744 approximately. The returns from the concentrates treated during the year were not quite so good as we expected, although a profitable return was obtained—namely, from 27 tons treated we obtained 88 oz. 1 dwt. 18 gr., valued at £281 4s. 9d. The mine has paid its way from start to finish, and remitted a sum of £1,200 to the head office. In addition to this we have spent £311 15s. 4d. on Mine-development Account, or the driving of the incline; £246 4s. 3d. on New Plant Account, and £19 on Property and Plant Account, all of which works are chargeable to capital. On Mining Account—that is, rising, crosscutting ,and stoping—the sum of £2,339 11s. has been spent to obtain 2,288 tons of ore, or an average of £1 0s. 5d. per ton mined. 2,178 tons was milled at a cost of £534 4s. 4d., or an average of 4s. 10d. per ton milled. 27 tons of concentrates was treated by cyanide at a total cost of £28 15s. 2d., or an average of £1 1s. 3d. per ton. This 27 tons treated is somewhat misleading, as the concentrates collected since the April treatment—some 30 tons—were not treated before the end of the year. It has cost £309 4s. 4d. for mine maintenance—that is, keeping the ventilation passage open and in repair, and also the main low-level adit and incline. A great part of the high-level adit forms a portion of the ventilation passage. The total expenditure on revenue accounts for the year—all charges—amounts to £4,821 9s. 9d., or an average of £2 3s. 2d. per ton mined and milled.

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The Farrell group of mines at Macetown continue to be closed down. Mr. Farrell is at present in London, with the object of making arrangements for restarting the mines at an early date.

Cromwell.

Cromwell Proprietary Gold-mining Company (Limited), Bendigo (C. S. Reeves, legal manager; R. H. Blair, mine-manager).—(12/7/1902): The mine at present is let on a five-years tribute to the Bendigo Gold-mining Company (Limited). The London directors have now under consideration the tenders received for driving the low-level tunnel at Bendigo Gully, and the New Zealand board expects to receive instructions at an early date. The tributers have nine men at work—six underground and three on the surface. The whim-shaft, 190 ft. in depth, on the south lode was pumped out and put in fair order, but the underground workings had collapsed, and the timbers rotted. No. 1 shaft was then sunk 32 ft. deep on the north lode, and a drive put in a short distance at the 24 ft. level. At the 32 ft. level a drive is now being put in to test the stone, which averages in the faces 9 in. in width, with an average assay-value of 1 oz. 3 dwt. per ton. Also, on the north lode, an old shaft 65 ft. 8 in. deep has been cleaned out and put in order, and it is now proposed to drive on a leader of stone 6 in. in thickness. An adit has also been driven on a line known as the Bee line of reef a distance of 68 ft. to meet the main lode at the Hit-or-Miss Junction. In this adit there is a strong chute of quartz from 20 in. to 24 in. wide underfoot, which looks very promising. Before starting to sink on this the water is being allowed to drain off. A shaft had been sunk on a lead of stone 2 ft. wide on the main lode, but its assay-value proved low. Up to date about 20 tons has been crushed, but there has been no final clean up. Five heads of stamps have been in use, but another ten are being put in repair for crushing. A large body of broken ore on the surface, which is said to assay 12 dwt., but which is slightly refractory, is to be crushed and cyanided. Preparations are being made to prospect the reef in other places, and for the present the whole of the work is being carried on on prospecting lines. The Bendigo Tailings Syndicate holds a tribute for working the old tailings. A cyanide plant has been erected, on which four men have been engaged since the beginning of the present year. To the 12th July 477 tons of tailings had been treated, with a yield of 58 oz. 15 dwt. 8 gr. gold, valued at £156 8s. 7d. Work is at present suspended on account of the frost. (17/10/1902): The mine has been sublet on tribute to M. B. Edwards and party, several of the party having previous knowledge of the Bendigo reefs. A shaft 152 ft. deep on the main lode was repaired and ladders hung. Good stone had been taken from this point previously, but the payable chute had cut out. About seven weeks' prospecting-work was done in this shaft, and 80 tons crushed, from which the return was low. The tributers are now doubtful of finding payable stone in the high levels of the mine, and capital will be required to mine the stone at depth. Several of the tributers did some further prospecting, with unsatisfactory results. Tenders are now being invited for the purchase of the property of the Cromwell Proprietary Gold-mining Company (Limited), Bendigo, consisting of mining licenses, water-races, winding and crushing plant.

Bendigo Tailings Syndicate, Bendigo (S. E. Brent, secretary; P. H. Grummitt, manager).—(12/7/1902): Operations had been carried on up to recently, but prevailing frosts have caused work to be temporarily suspended. There is still a large quantity of tailings in the dam to be treated. The plant is comparatively small, and hence the process is longer than is desirable. (17/10/1902), (C. L. Gregg, manager): As the tailings will soon be exhausted in the dam, arrangements are being made to erect a plant on the flat at the foot of Bendigo Gully. There is a large deposit of tailings from several batteries lying on this area. They are covered by an overburden of material brought down by the creek. Two men were engaged erecting a vat, and one in throwing a wing dam across the bed of the creek. Three men are engaged on the cyanide plant.

Alta Mine, Bendigo (H. Holmes, manager).—(17/10/1902): This mine, which had been idle for many years, has been taken up by another party, who intend to give it a thorough test. The Eureka battery from the Rise and Shine has been carted to the Alta Claim for re-erection. Five heads only will be erected, and motive power will be supplied by a 7-horse power oil-engine. Water for the tables and ultimately for motive power is being brought in from Clear Creek and the higher branches of Bendigo Creek, a distance of four miles. A shaft has been sunk 35 ft. on a reef averaging 3 ft. in width. A parcel of stone from this reef assayed 27 dwt. of gold to the ton at the School of Mines. A level is to be driven in from the battery level, whereby 100 ft. of backs will be available. This should test the value of the reef. The reef strikes east and west, and has a slight underlay to the north.

Bannockburn.

Holliday's Mine, Carrick Ranges (J. B. Holliday, owner).—(17/7/1902): Mr. Holliday has for the last five years been prospecting on the Carrick Ranges to pick up the reefs at a lower level than had hitherto been attempted. Drives totalling 600 ft. in length, together with various crosscuts, have been driven. The country is broken in the drives, and no body of quartz has yet been met with. 170 ft. of backs would be obtainable, but no stone having been found to rise on, the work done so far proves nothing of the value or permanency of the reefs in depth. The holding consists of 52 acres, embracing the Heart of Oak, Duke of Cumberland, and Nil Desperandum Claims, from each of which highly payable stone was taken at shallow depths by former companies.

Messrs. Lawrence Bros.—(17/7/1902): Operations intermittent; two men occasionally at work. The work, however, is not of a progressive nature, but is confined to taking out blocks of stone in sight. Quite recently attention has been redirected to the Carrick Ranges by several prospecting syndicates.

Nothing of a very progressive nature has been done yet in connection with any of the reefs. There is a wide field here for reefing, but the stone is refractory, and will require special treatment.

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Bald Hill Flat.

White's Reef, Bald Hill Flat (R. T. Symes).—(13/11/1902): The level is now in 650 ft. along the hanging-wall of the reef. Quartz leaders carrying gold are met with, but no main body of stone. Three men usually employed. Being a prospecting-drive, it is of small dimensions, but close-timbered. Rises are put up at intervals to connect with an upper level for ventilation. The present face is 40 ft. ahead of the last uprise, and preparations are being made to rise again 70 ft. to the upper level. Solid country has now come in at the face, and regular stone may shortly be met with. In the event of payable stone being struck, the drive will be improved in height and width. In the upper workings the best stone in the mine was obtained from the foot-wall. All the quartz met with in the prospecting-drive is put through the battery, and the stone, being partially decomposed, is very free-milling.

Excelsior Mine, Bald Hill Flat (F. W. Gray).—(13/11/1902): A cross-drive to the reef has been driven 300 ft. through the country to the foot-wall. The drive is strong and well timbered, while the timbering throughout the mine is exceptionally well done. Good stone has been obtained from this mine. Four men employed.

Rough Ridge.

Rough Ridge Quartz Reef, Rough Ridge (F. H. Perry).—(10/12/1902): The owner has lately done some prospecting-work on the Great Eastern lode. A cross-drive was put in 45 ft. to prove a high-level block of stone left by the old company. A cross-drive has now been driven 95 ft. into the same block. This will give 50 ft. of backs. The lode runs about 1 ft. in width, and averages 15 dwt. of gold to the ton. Mr. Perry is also engaged cutting out a new machine-site in solid rock, the present site being over worked ground.

Waipori.

O.P.Q. (Waipori) Gold-mining Company (Limited), (A. E. Inder, manager).—During the past year quartz-mining in Waipori district has been at a standstill. For some months after closing down the O.P.Q. Mine was kept unwatered, and the levels kept open in readiness to resume operations should instructions to that effect be received from the London board of directors. No arrangements having been made to resume work, the pumps were stopped and a caretaker placed in charge of the mine.

Bella Reef, Lammerlaw Range, Waipori (R. McKeitch and party).—A sample of concentrates sent to Victoria for treatment appears to have gone astray, and since the death of Mr. McKeitch, one of the partners, nothing further has been done in connection with the mine.

Cox's Reef, Lammerlaw Range, Waipori (F. W. Knight).—Not working for a considerable time. A decided opinion as to the value of this reef is held locally, and the near future may see it receiving a further trial.

Waitahuna.

In this district quartz-mining has been almost at a standstill.

No work has been done on the Table Hill Quartz-mine for some considerable time.

Sutherland and party have been out prospecting on the Burnt Creek line of reef, and have taken out about 20 tons of stone for a trial crushing in Sturm's battery.

Milton.

Canada Quartz Reef.—Since the death of Mr. Lawson this property has changed hands, but no further developments have taken place.

Macrae's.

Quartz-mining at Macrae's.—Quartz-mining in this district is progressing steadily. Consequent upon the success attendant on several of the mines more attention in the way of prospecting is being paid to the possibilities of the district as a reefing-field. Improved machinery is also being brought on to several mines, which fact alone speaks for the value of the several properties. Much of the earlier quartz mined in the district had been surface stone, quarried opencast, but as these deposits were worked back recourse was had to underground mining, as in the case of the Ounce, Golden Bar, and Golden Point reefs. The permanency and value of the reefs have been thus proved to a limited depth only, but the mines are being further developed.

Bonanza Mine, Macrae's (L. O. Beal, jun., owner; T. Kinvig, manager).—(14/8/1902): The low level is 1,550 ft. in length, is in good order, and the timber fairly well preserved, but the road is very soft underfoot. Timber in the top level is being repaired, and the level in good order. Since my previous visit this top level has been extended 200 ft. on the foot-wall reef, and two uprises of 50 ft. each were put up to the surface. One block of quartz has been stoped out for a length of 50 ft., and stoping is being carried on in the next block. Some good stone has been recently taken out on the foot-wall reef, and in the rise to the surface a good block of stone has been met with. Stone has been stoped out on the foot-wall reef between the 60 ft. level and the top level, and this completes the work done below the top level. Four men are employed in the mine. The aerial tramway for conveying stone to the battery continues to work well. There is plenty of water available this season for crushing purposes. The 3 ft. Huntingdon mill and pyrites-grinding pan continue to give satisfaction. Rules posted, and care taken with explosives.

H. A. Mills and Sons, Macrae's.—(15/8/1902): For some considerable time the United battery has been supplied with surface quartz from the neighbourhood of Golden Point. At the time of my visit there were none of the party about, but I was informed that lately they have not been so successful and were prospecting another property. Mr. Mills has since informed me that the battery has been idle for the past twelve months. During the three years it was in active operation

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a considerable quantity of surface stone was put through with favourable results. It is understood that the battery is now for sale. Mr. Mills has done a good deal of prospecting in the locality, the results of which are not announced. There is plenty of good stone on private property adjacent to the battery.

Donaldson's Golden Point Mine (W. H. Lidston, manager).—(13/8/1902): After the surface stone had been obtained a drive was commenced, and this is in a distance of 300 ft. The stoping was carried out to the open face, and mining is now being carried on in more solid country. At the time of my visit two men were in the face, and expected to break through for air in about 10 ft. The main drive was in good order, but required constant attention owing to the crush from the stoped-out area. I found gelignite and detonators lying in the mouth of the drive, and drew the manager's attention to this, writing to him on the 25th instant to provide proper storage. A tunnel, 6 ft. by 4 ft., is being driven to meet the main workings—in about 90 ft. Air in the mine was heavy after shot-firing, owing to there not being a free vent through the stoped-out ground. Messrs. Donaldson Bros. intend to put their stampers in crushing repair and discard the Huntingdon mill. Four men employed in the mine. On a later visit four men under Mr. J. Pascoe were laying bare the reef at a point on the line preparatory to mining it from that point. The reef is here very wide and carries a considerable amount of scheelite. The work is being conducted in a safe and workmanlike manner. In anticipation of a large body of payable stone being opened up, a new ten-head stamper-battery has recently been erected. This is to replace the Huntingdon mill so long in use and from which good results have been obtained. The 15-horse-power oil-engine, which has supplied the motive power for the mill, has been superseded by a Marshall 10-horse-power engine and 14-horse-power boiler, lately belonging to the Inchholme Gold-dredging Company. Mr. W. Donaldson recently visited England in connection with the scheelite industry, and brought back with him a new Woodbury shaking-table, which has been installed in place of the Frue vanner formerly in use. The sample of scheelite which comes off this table is of very fair quality, and with slight improvements Messrs. Donaldson expect to obtain good results from it. One advantage is that a larger quantity of material can be treated. The value of the concentrates is also very fair. Having plenty of power available, an additional ten head of stampers may be erected in the near future.

Ounce Reef, Macrae's (Spiers and Ross, owners).—(13/8/1902): As a flood had carried away the storage-dam for the battery, water operations have been discontinued at the mine, and Mr. Ross, a shareholder, gave me to understand that the mine will be let on tribute, as the restoration of the dam will be too large an undertaking for present shareholders. The mine has since been let on tribute for several months. Before starting in the mine the tributers continued the race some distance on to strike the creek higher up. (This was dead-work for them.) From 60 to 70 tons of stone was then taken out of the mine and crushed, but the returns were not encouraging after the outlay previously incurred. The stone had to be carted a distance of a mile to the battery, and this added considerably to the cost of getting the quartz.

Lidstone and Sinclair are prospecting along the line of reef, taking out stone at various points.

Golden Bar Gold-mining Company, Macrae's (D. Reddie, manager).—(13/8/1902): This property is held by a syndicate of working shareholders. All the surface stone having been mined, a level is driven 105 ft., and a rise put up 40 ft. on the reef, which averages 5 ft. wide. A further 40 ft. was driven from the rise for air, and completed. Before stoping the level will be driven on further to test the continuance of the reef. The walls are well defined, the country hard, and no timber has been required in the drive. A good deal of surface prospecting has proved the reef on the surface to be regular, although the value of the stone is not uniform. Seven men were in the mine. The battery is working sixteen hours a day, and four men are employed. A box for explosives was lying on the surface, and I informed the manager that safer storage should be provided, and wrote to him on the 22nd instant to the same effect. There is plenty of water available for crushing purposes at present. More recent information is to the effect that in the adit, which is driven for over 180 ft., a splendid block of stone has been opened on for the last 70 ft. Uprises for 50 ft. are through a strong body of quartz 4 ft. to 5 ft. in width, between strong walls. The average value of the stone is satisfactory, although blocks of barren stone are frequently met with. Unlike the Golden Point Mine (where the scheelite has gold and silver associated with it), in this mine where scheelite occurs the quartz becomes poor. Stoping is carried on vigorously, and the battery is kept running full time. Five men are employed in the mine, which, under the management of Mr. D. Peddie, is in good order. Filling for the worked-out stopes is sent in from the surface, and where it is not put in a plentiful supply of timber is used. Ventilation good throughout the mine. The quartz is carted by contract about half a mile to the battery. Crushing plant until lately consisted of a ten-head battery. The portable engine and boiler formerly in use has been discarded, and an 8-horse-power portable Marshall engine and boiler, working up to 80 lb. pressure, had been recently put in. The power was not sufficient for ten head of stampers, and five were cut off. From 60 to 70 tons of quartz is now put through per week. The efficiency of the crushing plant is increased by the addition of a Challenge ore-feeder. The gold-saving appliances are the ordinary silvered plates. The explosives are kept in a secure magazine, and only sufficient for the day's requirements is taken into the mine.

Alfred G. Davies, Dunback Hill, Stoneburn.—(15/8/1902): Davies has lately acquired some freehold property, and is now prospecting an outcrop of quartz thereon. The width is about 3 ft., and is dipping slowly. A flood carried away both his storage-dams, and he now intends to procure an oil or steam engine to provide power for his five-head battery, which was formerly driven by an overshot water-wheel. Davies has since been mining a considerable amount of surface quartz from various points over his freehold property on Dunback Hill. The stone is carted some distance to the battery. This season Mr. Davies has installed a Ransome portable engine and

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boiler to drive the battery, and has only sufficient water for boiler-feed and battery-tables. Gold-saving appliances consist of the ordinary silvered plates. Being surface stone it is fairly free-milling, but assays of the tailings show that a considerable percentage of the gold was escaping over the tables. The tailings are being saved for future treatment.

Maritana Reef, Macrae's (M. C. McGill).—(13/8/1902): Erecting a six-head battery on the Maritana reef. This is to be driven by an overshot water-wheel, 16 ft. in diameter. The battery will be completed in a month, and will then be started. The reef has an average width of 3 ft., and shows up on the surface close to the creek-bed in an open-cut. A few tons will be easily obtained, but the dip of the stone will carry it below the level of the creek. Only a small quantity of scheelite is present in the stone. The battery has since been completed, and several trial crushings have been made. The battery works well, but owing to the scarcity of water in the creek continuous operations were impossible. During the coming winter a plentiful supply of water will be obtainable, but as a safeguard against future dry seasons a suitable oil-engine will be procured. The crushings have proved the quartz payably auriferous but highly refractory. Assays of the concentrates have proved them to be very valuable. The crushed material will require closer treatment than that afforded by a spread of quicksilver tables. Mr. McGill has had considerable reefing experience in South Africa and elsewhere, and anticipates that he will have no difficulty in making the mine pay well.

Barewood.

Barewood Gold-mining Company, Barewood (W. C. Hitchcock, manager).—(26/3/1902): Work in this mine is confined to extending the 125 ft. level and stoping out the reef above. The mine is in good working-order; the level, passes, and travelling-ways are secure and well timbered. Air is plentifully distributed throughout the working-faces. Work is carried on in two shifts, each shift having two men in the stopes and two in the level. Eight miners, two truckers, and two engine-drivers are employed. A chute of quartz, averaging 10 in. in thickness and (as picked stone) giving 1 oz. to the ton, has been opened up for 300 ft. in length. In the stopes there are 80 ft. of backs over 50 ft. length of stope, and over the level there are 110 ft. of backs for 60 ft. of length. In conjunction with this stone there are other ends, so that there is evidently stone in sight for two years' work. On account of the barren quartz broken down with it, the good stone is reduced to about 12 dwt. in the crushing. Rules posted and report-book to date. A secure magazine for explosives has been built a short distance from the mine. The battery, under the charge of Mr. Wolters, has been working full time this year. Battery staff consists of manager, driver, and two feeders. Scarcity of water and smallness of crushing plant are drawbacks to this mine A trial is being made of the concentrates, but the result is not available as yet. Machine-register book not at the battery. (3/12/1902): During the past year stoping has gone on continuously in the mine. The 125 ft. level was also extended until the stone gave out in the face. The mine is in good order, and there is a good supply of timber on hand. Below the intermediate level the shaft is standing full of water. Should operations be carried on from the low level, a heavier winding and pumping plant will be required. Eleven men are employed. All passes, ladderways, and travelling-roads are in good order, as are all surface arrangements, magazine, &c. The battery works full time when the water-supply is adequate. Report-book up to date. As a result of the treatment of the tailings the company expects to pay wages and expenses out of the treatment of tailings and concentrates. Oswald Mosley, miner, met with an accident on the 22nd October. He was at the windlass over the sump winding a bucket of dirt, when his hand slipped, and the windlass-handle reversing struck him on the face, causing subsequent loss of left eye.

Sutton.

The Sutton Quartz-mine, Matarae (James Hunter).—(26/9/1902): Tunnel 350 ft. to face. Driving west on what is known as "the little reef," which is expected to junction with the "big" reef a short distance ahead. Walls 3 ft. to 4 ft. apart, lying at angle of 45°. Slippery backs or headers had latterly been coming in at the face, and on the 22nd instant Samuel Stevens, who worked alone, had been caught by a stone and pinned to the floor, where he remained for some four hours ere being released by Mr. D. Ross, manager of the adjoining sluicing claim.

Preservation Inlet.

Venus (late Mavourneen), Crawfish Island, (F. G. Cray, Dunedin).—(17/5/1902): 29 acres. An outcrop of quartz above high-water mark on the north side of the island on the beach where Messrs. Cullen and Clark, in the year 1890, obtained rich specimen pieces of stone and gold intermixed. Line of reef, north-west and south-east; underlay, west. A new shaft 6 ft. by 4 ft. (centred) has been sunk 73 ft. on the underlay, but being filled with water at this date I was unable to go down. Mr. J. Hawkins, who sank the shaft, informs me that the stone was 4 ft. in width near the top, but bunchy, and at 35 ft. ran into stringers of quartz only, which gave out entirely at 48 ft., from which point to the bottom of the shaft no stone was struck. A few tons of stone is stacked at the mouth of the shaft, but apparently no work has been done for several months. A small shaft had been sunk near-by from which 3 tons of stone was taken, and crushed at the Morning Star battery in December, 1900, the yield from which is said to have been at the rate of 16 dwt. of gold per ton.

New Venus (late Monte Christo), Crawfish Island (McQueen and party, Dunedin).—(17/5/1902): 22 acres. What is termed the main reef crops out on the north-west side of the island on McKenzie's Beach, and at about 150 ft. west a leader which carried rich specimen gold on the surface was worked on the beach in the years 1894–95. Attempts were then and since made to sink and drive on the leader, as evidenced by indications of three old shafts on the beach and a drive into the hillside. The shafts are wrecked, and the entrance to the drive is fallen in, and they afford little information at

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the present time. The workers are said to have been unsuccessful in obtaining payable gold at depth below the surface. On the north-east side of the island an old adit level which had been driven to crosscut the main reef is being extended 25 ft., is now 231 ft. to the face, and still in hard country. A line through the bush from the main-reef outcrop crosses the adit, so that the main reef should have been cut ere now. Rich alluvial gold associated with quartz had been found on McKenzie's Beach in the vicinity of the outcrops of main reef and leader.

Sunrise Gold-mine Company, Te Oneroa.—(19/5/1902): Considerable prospecting and driving was done by this company in 1897–98. A level was driven 800 ft. on the eastern boundary of the Morning Star Claim, and a crosscut 300 ft. east, all in slate. No quartz met with.

The New Star (late Morning Star) Gold-mining Company, Te Oneroa (W. Lovell Davis, manager).—(19/3/1902): The mine had been standing about a year when, on the 1st March last, it was let on tribute for twelve months to a party of six miners, who have sunk a winze 6 ft. by 3 ft. by 46 ft. in a block of stone left underfoot by the old company in No. 2 level. A small block of surface stone in the creek-bed between No. 1 level and No. 1A level has been stripped, and is being taken out. The tributers got their first cake of 32 oz. from 30 tons of stone on the 30th April last. When the mine was in work the stopes were filled in as stone was taken out, and during the period the mine was standing two men were kept on. Levels and passes have been maintained, and timber renewed where necessary. Air good; rules posted; plan to date. The mine is in excellent order and well conducted. The general trend of the reef is north-west and south-east, dipping to the west about 1 in 6 from the vertical. The reef outcrops on a steep hillside immediately behind the township, and has been driven on from five levels, the low level (No. 3) being considerably above sea-level. Paystone got from the mine has all been found on the hanging-wall, the stone ranging from 2 ft. to 6 in. in width. The main chute of stone was found to pinch out and become poorer going down, and No. 3 level was mainly driven in dead-work; going south the stone gave out at 1,056 ft. in No. 1 level, and Nos. 1 and 1A levels were extended 260 ft. and 200 ft. respectively in "dig" (mullock) and buck-reef, with occasional bands of barren quartz; water making freely. Since the mine was started in 1895 up to 31st December, 1900, 13,590 tons of stone, yielding 12,525 oz. of gold, value £50,908, was obtained from the chute of stone worked. The efforts to find a new chute of stone being resultless, prospecting had been discontinued when the funds of the company became exhausted. Several cuddys (crosscuts) put in off No. 2 level proved the lode formation to be 40 ft. in width between the walls, patches of barren stone in mullock only being found; an intrusive dyke of decomposed granite 20 ft. in thickness, running east and west, was crossed in all the levels, stone being cut out near the dyke, but rapidly made again.

Tramways: Timber, &c., for the mine is conveyed uphill from the wharf by a carriage on an aerial ropeway (stationary). A 3 in. steel rope is mounted on trestles and securely anchored at the upper end with tension at beach, a 1¼ in. steel endless rope being used for haulage; drum, 3 ft. diameter, driven by a Pelton wheel 2 ft. 6 in. diameter; water-pressure, 90 ft. vertical head. Battery material, coal, &c., are hauled to the battery-house from the wharf on an ordinary tramway by a steel flexible rope, the pulley on a counter-shaft being belt-driven from the main driving-shaft. Trucks of stone from the mine are lowered to the mill by a self-acting drum 4 ft. diameter tramway, three rails with meeting-place in centre. The compact little battery is in good order. Ten head of stamps (five heads 900 lb. each and five heads 800 lb. each) are driven by a 4 ft. 6 in. Pelton wheel under a vertical pressure of 250 ft. head. Pressure-pipes are reduced from 13 in. to 9 in. and 7 in. diameter. When water is scarce steam-power is substituted, being supplied by an under-type combined engine and boiler by Robey and Co.; engine, 12-horse power; steam-pressure used, 55 lb. per square inch, Westport coal being used. The tables are 21 ft. in length by 12 ft. in width, the first drop being 6 in. to 7 ft., and the second drop 8 in. to 14 ft. length. Four berdans are used for treating blanketings, and ten berdans for tailings, which are conveyed by shoots direct to the berdans from the tables. Numerous assays of the tailings from the berdans gave an average loss of 1 dwt. of gold per ton of quartz crushed. The stamps were constructed by Thompson, of Castlemaine; the berdans by Price, of Thames.

New Alpha (late Alpha) Gold-mining Company, near Head of Sealers' Creek No. 1, Te Oneroa (Frank Junker).—(21/5/1902): The shaft had been sunk on a blow of quartz near the junction of the slate and sandstone formations. Rich stone was got on the surface, and alluvial workings in the vicinity were highly payable, heavy alluvial gold intermixed with specimen quartz being obtained. Sinking and underground operations have proved most disappointing. The lodes to the south of the shaft contained very little non-payable stone; the lodes pinch out north, and underfoot the stone makes, but is almost barren. The shaft is 141 ft. in depth, 10 ft. by 4 ft., divided into three compartments, the first being furnished with a cage for winding trucks of stone, the second for winding water, and the third as a ladder-way. The shaft is sunk on the No. 1 or eastern lode, which alone has proved payable. Nos. 1 and 2 lodes are 68 ft. apart at the shaft-bottom, but are rapidly coming together, going north. No. 1, north level, is driven 250 ft., the stone being pinched out at the face. All payable stone on this level has been stoped out. No work has been done on this level south, the shaft being sunk through a slide. At 84 ft. from the surface intermediate levels have been driven south 60 ft. on No. 1 lode and 100 ft. on No. 2 lode. No. 1 bottoms on the floor of the slide; no stone. In No. 2, following up on the slide, stone is broken up and poor. The mine was let on tribute for twelve months as from the 1st February last. The tributers have sunk a winze 45 ft. on the hanging-wall of the No. 1 lode, north level, at 180 ft. from the shaft on a block of stone, which, when being driven, crushed 5 dwt. of gold to the ton. Going down the stone widened to 20 ft., and proved to be almost barren. A crosscut was driven 16 ft. from the hanging-wall, and a drive north 30 ft. half-way down the winze drove south 16 ft., all stone tested being unpayable. The country being hard, levels are standing in good order, mostly without timber. Heavy timber

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has been put in where used. Air good. The mine makes very little water, which is easily kept under by a barrel. Winding plant: Drum, 3 ft. diameter; geared; reversing by fast and loose pulleys; belt-driven; winding-ropes, 2½ in. galvanised-steel wire; Pelton wheel, 5 ft. 6 in. diameter; pipe column, 600 ft. in length; pipes reduced from 13 in. to 11 in. to 9 in.; pressure, 200 ft. vertical head. Battery: Ten-head stamps, each 600 lb., driven by Pelton wheel, similar to winding-power; tables, copper plates 6 ft. in length by 11 ft. in width; blanket-strakes, 9 ft. in length; blanketings passed through two berdans driven from intermediate shaft.

Cuttle Cove Gold-mining Company, Cuttle Cove.—(24/5/1902): An adit level was driven 100 ft. about the year 1900, the leader cut being only 6 in. in thickness, laminated in the country-rock—slate. Dip, 1 in 2½ from horizontal; stone highly pyritiferous. In June, 1901, the mine was let on tribute to two miners, who laid a tramway from the beach and took out a trial crushing (15½ tons) of stone, which on being crushed at the Morning Star battery returned 11 oz. 13 dwt. of retorted gold. The mine has been recently taken up, and the proprietors propose to do some further prospecting.

Tarawera Mining Company, Isthmus Sound.—(31/5/1902): The reef is seen outcropping on the beach; strike, east and west; underlay, south, 1 in 7; reef, all quartz, 2 ft. 6 in. in width in hard country (granite). No work has been done here recently. A shaft 8 ft. by 4 ft. had been sunk 80 ft. and a level driven to the reef. The quartz carries several minerals, galena, &c. (see Geological Report, 1896; McKay), but the returns are said to have been non-payable.

Golden Site Extended Gold-mining Company, Wilson's River.—(27/5/1902): Underground work was suspended on the 30th April, 1901. The water was kept under for a time, but pumping subsequently discontinued. Extensive prospecting had been conducted, but stone was all too poor to pay expenses. It was hoped that the Hesperides reef would turn out to be payable, and the reef was opened up, but here again the results were practically nil. The mine stands full of water to the river level; rails have been left in; ten-head battery and plant recently sold. The bush tramway from Cromarty is in a state of disrepair, being overgrown with scrub, and the wooden rails are rotting away.

Fifteen men are employed in the locality at quartz-mining. Some few years ago prospecting-work was regularly carried on, but is now intermittent. The country, generally speaking, is highly mineralised, and the work, though arduous in the extreme, is said to have been very fascinating, the principal drawbacks having been roughness of the country and the difficulty of obtaining necessary supplies and maintaining communication with the inhabited world. Old miners, having spent years on the south-west coast, are quite satisfied that "something good will be found there yet," and are only now constrained to reluctantly abandon their search owing to advancing years and diminished purses.

HYDRAULIC AND ALLUVIAL MINING.

Deep Stream.

Deep Stream Amalgamated Hydraulic Sluicing Company, Deep Stream (A. C. Buckland, manager).—The ground is shallow, and consists of a material of a fine nature, and sluicing operations are advancing rapidly up the flat, being now two miles above the point where work was begun. Two elevators are at work lifting dirt to a height of 35 ft. under a pressure of 300 ft. vertical. The windings of the stream hamper proceedings, as the work cannot be carried forward in a proper face. Intake races being frozen up, work is usually suspended in winter for a period of about six weeks. Gold-saving appliances consist of angle-iron ripples in the boxes with perforated plates and cocoanut-matting. Eleven men employed.

Sutton.

Hibernia Sluicing Company, Matarae.—Water being in plentiful supply all season, work has been steady. The face is 45 ft. in depth, and there is 3 ft. of wash resting on a very soft bottom of fine sand. This bottom being easily cut, great care is required in handling the nozzle when cleaning up bottom. Edges of face kept nicely trimmed to prevent falls occurring. The tail-race tailings-tunnel continues working satisfactorily and has never given any trouble. No work has yet been done to test the false bottom.

Manuka Creek.

Stewart's Sluicing Claim, Manuka Creek.—There is very little work now done in this ground-sluicing claim. The friction between the farmers and the claimholder on account of dirty water continues to hamper sluicing operations very much. The tailings are discharged into a gully, and held there by a series of dams, allowing only comparatively clear water to flow away.

Waitahuna.

German Flat Hydraulic Sluicing and Elevating Company, Waitahuna.—This private party have not been so successful as was expected. The average depth of the ground is 10 ft., the top layer of clay being hard and troublesome, but there are a few large stones in the wash. With a water-pressure of 120 ft. the material is elevated 20 ft. As the work is being pushed on up the flat pressure is being lost, and if a more payable class of ground is met with the pipe-line will be shifted to bring the pressure more directly on to the claim. Four men employed.

Upper German Flat Hydraulic Sluicing Claim, Waitahuna (S. Johnston and M. Girvan, owners).—The flat operated on is very even on the bottom, the average depth of the face being 8 ft. The top layer consists of a hard clay, which is somewhat troublesome to work. Pressure, 160 ft.; height of lift, 15 ft. The ground is little better than payable. Three men employed.

Ferris and Traye's Sluicing Claim, Waitahuna Gully.—This is the only party in this district working into the cement deposit. The method is to sluice off the top layers of recent deposits and

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then to tunnel into the cement and break it down by blasting. After being broken up and reduced it is sluiced down several hundred yards of tail-race, fitted with cocoanut-matting and ripples in one section and cobblestone in the other. There was no one in the claim on the date of my last visit. Four men employed.

Quilter and Sons, Waitahuna Gully.—Since my previous visit very little material had been shifted, chiefly on account of the water-supply being poor and unreliable. Two heads are brought into a storage-dam, allowing about four heads to be available on the claim for a short day's work. The plant consists of 500 ft. of pressure-pipes; pressure, 75 ft. The material is elevated 20 ft., and then passes over a short run of boxes fitted with riffles and cocoanut-matting. Two men employed.

Thompson and Party (Norwegian Company), Waitahuna Gully (C. Thomson, manager).—This party have still a small area of unworked ground up the middle of the flat. Until quite recently a second elevator was in position, working out a piece of ground at the head of the claim. The ground is shallow, varying from 10 ft. to 12 ft. in depth, and the material is elevated 26 ft. The splendid pressure available—fully 300 ft.—has enabled a large quantity of material to be elevated. The gold-saving appliances are angle-iron ripples, perforated plates, and cocoanut-matting.

Sailors' Gully Hydraulic Sluicing Company, Waitahuna Gully (A. Barr, manager).—The main body of tailings in the gully having been worked, the adjoining terrace is receiving attention. The recent deposit overlying the cement is being elevated, the water-power not being adequate to attack the body of cement. The water-supply is also unreliable, as the country through which the race is cut is very broken. The face of the claim is 10 ft. high, consisting of clays and gravels. This is sluiced down to the elevator and elevated 24 ft., and then passes over 120 ft. of boxes fitted with ripples and matting. Sluicing is only carried on during the day.

Wetherstone's.

Golden Crescent Hydraulic Elevating Company, Wetherstone's (W. Smythe, manager).—During the past year a large area of shallow ground and the adjoining spurs had been worked with highly payable results. The winter having been a fairly open one for sluicing, there has not been much time lost, but some trouble was experienced in keeping the races clear from snow. Present operations are confined to the foot of Post-office Gully. Some years ago several shafts were sunk in this gully into the conglomerate. At the last inspection the company intended to cut their race on to Ballarat Hill. A pressure of 260 ft. will then be available, and this will serve for the life of the claim. With the present available 200 ft. of pressure the material was being elevated 15 ft. The clay boulders require to be broken up, and the stones are picked out by hand. The terraces comprised in this claim were the scene of great mining activity in the early days, and had all been worked, the wash being driven out. Eight men employed.

Golden Rise Hydraulic Elevating Company, Wetherstone's (F. Whelan, manager).—During the year operations have been mostly confined to ground skirting the foot of the hill. An additional 500 ft. of pressure-pipes have been added to the plant to enable the lower end of the claim to be worked. The material is fairly easy to shift, and good paddocks are taken out, the work being carried on under careful management. The bottom consists of a sandy pipeclay overlying the conglomerate. The back face of the present paddock is 26 ft. in depth. The material is lifted 26 ft. and passed over a run of boxes 60 ft. in length, provided with angle-iron ripples and perforated plates. Four men are employed in the claim and one raceman. Operations have been highly successful this year.

Tuapeka.

Blue Spur and Gabriel's Gully Consolidated Gold-mining Company (J. H. Jackson, general manager; J. Uren, mine-manager).—During the past year sluicing has been fairly steady. At the time of my visit there were three elevators in position, lifting 69 ft. 5 in., 75 ft., and 45 ft. respectively. Twenty-eight men are generally employed in the claim, and four as caretakers of the various races. The upper seams, which have been worked continuously for many years, are fast working back to the boundaries. An attempt is now to be made to take up the deeper ground to a depth of 30 ft., whereby the life of the claim will be considerably lengthened.

Excerpt from the report of the manager (Mr J. Howard Jackson) furnished to his London board, dated the 23rd March, 1903: "The output of the mine is, I regret to say, smaller than during any year in the history of the company. The quality of the cement shows a serious falling-off all round. The total gold won in 1902–3 was 1,536 oz. 7 dwt., at £3 19s. = £6,070 0s. 1d. The total expenditure was £5,218 2s. 4d.; and the total wages paid £3,521 14s. 7d., an increase of £282 2s. 8d. over last year. The explosives used amounted to £318 0s. 6d., a decrease of £309 16s. 1d. as compared with last year. Owing to the poverty of the cement worked during the year the cost of production has increased from 63 per cent. in 1901–2 to 85·9 per cent. this year of the value of the gold won, leaving an infinitesimal margin of profit. Put in other words, it has cost £3 7s. 11d. to win each ounce of gold, worth (approximately) £3 19s. 6d. The head-races and dams are in good repair, and have provided water for sluicing 937·8 eight-hour days. Statement of work and values for the year 1902–3: No. 1 division—Hours sluicing, 3,075·5; cement, 71,658 cubic yards; gold, 385·86 oz.; value per cubic yard, 2·584 gr. = 5·095d. No. 1B division—Hours sluicing, 554·5; cement, 13,862·55 cubic yards; gold, 154·92 oz.; value per cubic yard, 5·356 gr. = 10·773d. No. 2 division—Hours sluicing, 1,197·5; cement, 39,876·75 cubic yards; gold, 281·14 oz.; value per cubic yard, 3·408 gr. = 6·734d. No. 2B division—Hours sluicing, 2,676; cement, 80,200 cubic yards; gold, 714·79 oz.; value per cubic yard, 4·273 gr. = 8·433d. Total hours sluicing, 7,503·5; cement, 205,325·25 cubic yards; gold, 1,536·74 oz. Mean value, 3·59 gr., or 7·09d. per cubic yard.

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Local Industry Gold-mining Company, Gabriel's Gully (W. Dawson, manager). — When the area in Gabriel's Gully was worked out the plant was removed to the head of Wetherstone's Flat. Since starting there operations have been successful.

Kitto and Party's Hydraulic Sluicing and Elevating Company, Munro's Gully. — This claim is held and worked by a party of private shareholders. The bed of Munro's Gully, containing a mass of tailings from the cement workings, had been worked right up to the cement, on which a start has now been made.

Mills and Party's Hydraulic Sluicing and Elevating Company, Munro's Gully. — This plant is still operating on tailings in Tuapeka Creek at the foot of Munro's Gully.

Waipori.

Golden Key Hydraulic Elevating Claim, Mitchell's Flat Waipori (J. Gare, manager). — This claim gives employment to three working shareholders, who are sluicing shallow gullies on Mitchell's Flat and adjoining spurs. There is deeper ground ahead.

Farrell's Deep Lead, Waipori.—The last operations conducted by Mr. Farrell in the deep ground near the river were not successful. Each successive rise in the river flooded the paddocks and delayed the work. The water rights and plant have now been let on tribute to Mr. Robert Cotton, who is sluicing and elevating on his private land. The last paddock taken out was on a rapidly rising reef, with about 10 ft. of gravel stripping. This claim includes part of the Old Jutland Flat dredge-tailings; but the successful working of this class of ground would appear to depend on the quantity of material sent through the elevator. On the occasion of my last visit to the district I found that this plant had been shifted to the Lammerlaw side of the Waipori River, where it is operating on shallow ground. Pressure, 380 ft.; lift, 20 ft. Pressure-pipes vary from 20 in. to 7 in. diameter.

Lammerlaw Creek Hydraulic Gold-mining Company, Waipori (W. Caudwell, manager).—This claim is worked very systematically. As one side of the flat is worked up a channel is kept open into which the creek is diverted, while operations are transferred to the other side. In this manner the whole flat is being turned over, and no solid ground left untouched. A feature in the gold-saving appliances is the double spread of boxes in the middle of the "run." The gold-saving appliances are Venetian riffles, perforated plates, and cocoanut-matting. Pressure, 250 ft.; height of lift, 26 ft. Main-pressure pipes vary from 13 in. diameter to 9 in. diameter. Cleaning bottom in this claim entails considerable care. All parts of the bottom are carefully picked and swept up. Four men suffice for the ordinary working of the claim, but six to eight extra men are employed when cleaning bottom.

Sew Kew and Party, Lammerlaw Creek, Waipori.—This claim is held and worked by a party of Chinese. During the year a higher race has been brought in, whereby additional pressure has been gained. This party holds ground adjacent to and similar to that of the Lammerlaw Creek Company. Pressure, 200 ft.; height of lift, 20 ft. Gold-saving appliances consist of a run of boxes 46 ft. in length, fitted with angle-iron ripples, perforated plates, and cocoanut-matting.

Bakery Flat Sluicing Company, Upper Waipori (J. T. Johnston, manager).—Sluicing operations were carried on for the greater part of the year. The elevating plant has now been taken down, and the claim and water are under tribute to J. T. Johnston, who intends utilising the water to work his patent hydraulic dredge.

Golden Point Sluicing Company, Upper Waipori (J. Claffey, manager).—The pipe-line of this company has lately been increased by the addition of 800 ft. of 11 in. pipes. The plant has been shifted from the foot of Frenchman's Gully further up the same gully, where operations are carried on working to the false bottom. The dirt is elevated 15 ft., and consists mainly of tailings from old alluvial workings. When this gully is worked out the adjoining terrace will be worked, and this should provide employment for some considerable time. The stripping consists of 10 ft. of clay, and the average depth of wash is 3 ft. The pressure available at this point is 160 ft. Five men employed.

Post Office Creek Gold-mining Company, Verterburn, Waipori (J. R. Parker, manager).—This plant is still operating on terrace ground on the Verterburn, down to a false bottom. Four to five men usually employed. Pressure-pipe line consists of 1,200 ft. of pipes, varying from 15 in. to 9 in. Pressure, 130 ft.

Pearsall and Munro, Verterburn, Waipori.—This is a private hydraulic-sluicing plant. The ground consists of 30 ft. of gravel with 5 ft. of overlying clay. Height of lift, 23 ft. Four men employed.

Sutherland and Party's Sluicing Claim, Bungtown Flat, Waipori.—Several parties of Chinese turned over nearly the whole of this flat by hand-labour. Some deep ground was left at the lower end of the flat, and this is the site of present operations. There are blocks of good ground throughout the flat, and considering that the material is from 8 ft. to 12 ft. deep and of a free nature this should prove an ideal sluicing claim, with a good water-supply. A race has been cut in about four miles, and a dam-site is being prepared.

Beaumont.

Crampton Hydraulic Sluicing and Dredging Company, Beaumont (J. Fahey, manager).—Until quite recently operations had been carried on right up the flat, skirting the road-line. Work was very considerably hampered by boulders and buried timber. The plant has now been shifted to the top of the claim, and a start made to elevate deep ground near the river frontage. The first paddock was being taken out at the time of inspection. Drainage-water from the river should prove troublesome. During the year this company acquired and placed a dredge on the river portion of the claim. There is a considerable percentage of fine gold in this claim, which was only saved in the early days by the employment of a special run of boxes and a modification of Lee's tables, as was the case in the Round Hill Sluicing Claim.

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Island Block.

Island Block Sluicing and Elevating Company (James Nicholsen, manager).—Owing to the great length of pipe-line and consequent loss of pressure through friction the elevating plant is incapable of treating sufficient material to make the work remunerative. The gravel requires to be elevated 60 ft. in order to get fall for tailings. The top 40 ft. contains little gold, the wash being in or upon the bottom, which is a hard schist and full of crevices. This company has bought the Metallic dredge, and will re-erect it to work portion of this claim. When the dredge gets to work it is probable that the pipes (sluicing area) will be let on tribute to a party of working miners. At a subsequent visit I found that the plant and water had been let on tribute to D. Jones and party. The tributers will confine their operations to the east side of the channel, and have re-erected the elevating plant. The company's dredge is working a cut extending over the greater width of the flat.

Edie and Kirkpatrick's Claim, Tallaburn.—Currie's Flat is still the scene of extensive sluicing operations, carried on by this party. A large area of shallow ground is sluiced off through a tail-race into the river. The back run of deep ground is then elevated through a small elevator and discharged over a run of boxes provided with gold-saving appliances, finally passing through the tail-race to the river. At the lower end of the tail-race there is a considerable spread of gold-saving tables, which save a large percentage of the gold lost in the claim. With a pressure of 340 ft. available on the flat a large amount of dirt is quickly shifted. Perforated plates and cocoanut-matting form the principal gold-saving appliances. Seven men employed.

Curtin and Whelan's Sluicing Claim, Currie's Flat.—Three men find employment in this claim. The ground is shallow and the water-supply poor. The gold is coarse.

Miller's Flat.

Golden Run Hydraulic-sluicing Company, Miller's Flat (P. McLoughlin, manager).—Operations are rapidly advancing up the flat, and consequently loss of pressure is becoming very apparent. The ground varies from 40 ft. to 45 ft. in depth. The material has to be elevated over 60 ft. from bedrock, so that the available pressure of 225 ft. is far from adequate in a claim in which successful working depends on the quantity of material elevated. The tailings from this claim have all been discharged into the river. The company's dredge is beginning at the lower end of the flat to work up behind the hydraulic plant. From twelve to fourteen men are employed in and about the sluicing claim. When this claim was last inspected it was found that the sluicing plant had been permanently closed down. Successful and economical work could not be carried on under existing pressure, and the company decided to discontinue sluicing operations in favour of dredging. The company has a powerful dredge fully capable of dealing with the ground ahead of it.

Roxburgh.

Roxburgh Amalgamated Mining and Sluicing Company, Roxburgh (J. H. Waigth, manager).—Under careful and economical management, this claim has been working almost continuously throughout the year with satisfactory results. Forty-five heads of water are brought in from Teviot Creek. Vertical pressure, 550 ft. The working-pressure of the claim is 200 lb. to the square inch. Gold to the amount of 1,168 oz. 9 dwt. 11 gr. was won during the year, equalling in value £4,582 11s. 3d. The amount disbursed in dividends amounted to £2,184 8s. The average number of men employed was twenty-two.

Hercules Sluicing Claim, Roxburgh.—This plant and claim have been idle during the whole of the year.

Ladysmith Sluicing Claim, Roxburgh (W. Donnelley, manager).—This claim is situated on the east bank of the river. The present water-supply brings fourteen heads of water into a dam on Cemetery Hill. This allows twenty-six heads to be brought on to the claim during working-hours under a vertical pressure of 80 ft. Height of lift, 23 ft.; size of elevator-jet, 6 in.; size of throat, 10 in.; dirt-pipes, 18 in. diameter. The run consists of 230 ft. of boxes 2 ft. 6 in. wide, fitted with flat-iron ripples, and has 3 in. fall in 12 ft. The pressure-pipes vary from 22 in. diameter to 11 in. This plant does good work. Four men are employed. A new race (which is to be brought in three miles from Teviot Creek) will carry thirty heads of water on to Cemetery Hill. The available vertical head will be 150 ft., or about 65 lb. to the square inch at the claim. Twenty heads of water will be used by this company, and ten heads will be dropped into Coulter and party's race.

Coulter and Party's Sluicing Claim, Commissioners' Flat.—This is a privately owned hydraulic-sluicing plant. Height of lift, 17 ft.; size of jet, 5½ in.; size of throat, 10 in.; dirt-pipes, 15 in. diameter. The run consists of 600 ft. of boxes 2½ ft. wide, and has 4 in. fall in 12 ft. The vertical head is 75 ft., and the working-pressure at the claim is about 28 lb. to the square inch. The face is 40 ft. high, and consists of a layer of heavy, stony material overlying a body of fine gravel, all more or less auriferous. At present the Ladysmith water is being used on this claim. Four heads of water are brought from Teviot Creek into a dam, which holds sufficient sluicing-water for eight hours. Three men employed.

Manuel Bros. Sluicing Claim, Coal Creek Flat.—Four heads of water are brought on under a pressure of 65 ft. vertical head, enabling the material to be lifted 12 ft. The ground is over 60 ft. deep, and consists of rough river-wash.

Pleasant Valley Gold-mining Company, Coal Creek Flat (R. George, manager).—The material is being lifted 20 ft. through an elevator having a 2 in. jet. The mass of stones and boulders in the claim is enormous, and a crane is used to lift the stones out of the working-paddock. Tailings are discharged down a tail-race 1,000 ft. long, paved with stones and having 4 in. fall to the 12 ft. Five men are employed. The ground is becoming too deep and heavy for the water-supply. When this claim was last inspected it was found that the old working had been abandoned, and a new open-

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ing was being made into the top end of the gorge. The ground here is a mass of boulders with very little wash, and the undertaking is extremely laborious. Unless the ground proves more payable this claim will shut down in the near future.

Bald Hill Flat.

Carroll and Lynch's Sluicing Claim, Bald Hill Flat.—This is a privately owned hydraulic-sluicing plant. Five men are usually employed in the claim. Six heads of water are brought on to the claim under a pressure of 180 ft. vertical. The top material is swept off into the worked ground, and the bottom layers are elevated.

Mitchell Bros., Bald Hill Flat.—Two men find employment in this claim. The water is dropped over the face, which it cuts down. The material runs through a tail-race, from which the heavier stones are forked and thrown aside.

Ewing and Dowdall's Sluicing Claim, Bald Hill Flat (W. McNeish, manager).—When operations were discontinued in Ewing's claim at the head of the flat the water was diverted to command ground previously held by the Bald Hill Flat Freehold Dredging Company. The dredge was in operation for a few weeks, but failed to prove the claim payable for dredging. The result of the first paddock taken out by the sluicing plant was highly satisfactory. Six heads of water are brought in from Coal Creek and Butcher's Gully. Pressure, 200 ft.; lift, 24 ft.; size of jet, 2½ in.; size of throat, 6 in.; dirt-pipes, 13 in. diameter. The depth of the ground is 20 ft., and the material operated on consists of flat schistose wash. The bottom is a hard, fairly even schist rock. Since starting work the gold returns have been extremely satisfactory. Seven men are usually employed.

Last Chance Hydraulic Sluicing and Elevating Company, Bald Hill Flat (J. McNeish, manager).—This company's plant has been shifted further up the flat, and a paddock taken out behind the schoolhouse. This necessitated shifting the pressure-line also. The bottom is shallow for the greater part, with deep rifts in it. Seven heads of water are brought in twenty miles from Shingle Creek. Pressure, 300 ft.; height of lift, 26 ft.; size of jet, 2½ in.; dirt-pipes, 13 in. diameter. The paddock plant consists of 9 in. and 7 in. pipes. Nine men are employed.

Stringer and Party, Fourteen-mile Beach, below Bald Hill Flat.—This party is sinking a shaft on the bank of the Clutha River to test what is supposed to be a deep run of good wash. At this date 32 ft. had been sunk without reaching bottom.

Livingstone.

F. Christian, Hydraulic Claim, Livingstone.—There are two claims working. In No. 1 there was one man at work. Four heads are obtained from a storage-dam for day-shift only. Plant consists of 600 ft. of 15 in., 13 in., and 9 in. pipes. In No. 2 one man at work. 2,000 ft. of 18 in. to 7 in. pipes in use.

The only alteration of note in this district is the extension of the Mosquito Race a distance of two miles to command a claim on Cemetery Hill. This extension included the construction of one siphon 16 chains in length, and another 33 chains, having pipes varying from 22 in. to 11 in. A dam having an area of 3½ acres has been built. The wall is 45 ft. in the bottom, 7 ft. at the top, and 15 ft. high. The claim had been previously worked, but with an inadequate water-supply the ground was found to be too rough, although auriferous. Mr. Christian proposes to have a good water-supply and deal with the stones by means of a 5-ton crane. In the sluicing season this claim should employ ten to twelve men.

The Pipe Company, Livingstone.—Several parties banded together to put a siphon over the head of Golden Gully. Two heads of water are obtained from the Mosquito Race. There are several small claims comprised in the company, principally using canvas hose.

Other parties with small heads of water are Lauri Bros. and Yeoman, H. H. Roberts, and W. McQualli. These are supplied with water from the Mosquito Race by F. Christian.

All parties in this district are now ground-sluicing in the terraces back to a point at which the fall is lost.

There are a few parties sluicing on the Maerewhenua side of the river. Among these are M. Frater and Frater Bros., sluicing with water from Ben Lomond and Howe's Creek.

This district will depend in future on the Mountain Hut Water-race, which is being brought in from the Upper Maerewhenua River. J. Brayshaw has a pressure-line of 11 in. pipes, 13 chains long, laid on to his claim in Tunnel Gully in readiness for the water-supply when available. The ground is about 27 ft. deep, 12 ft. of which is auriferous.

Naseby.

John Hore and Sons, Lower Main Gully, Hogburn Creek.—No. 1 Claim: Special claim of 40 acres; depth of ground, 10 ft. to 15 ft.; wash, 6 ft. Four heads of water are brought in from the Government water-race. 1,800 ft. of pipes, reduced from 19 in. in stages to 11 in., are in use, and a pressure of 200 ft. vertical is obtained. Three men employed.

No. 2 Claim: Elevating, 22 ft.; face, 7 ft. to 10 ft.; average depth of wash, 3 ft. This ground is being worked for the first time. Four heads of water are brought in from the Government water-race; pipe-line, 750 ft.; pipes, 19 in. to 11 in.; pressure, 120 ft. Three men.

No. 3 Claim: Elevating claim (formerly the "dead level"). Six heads of water are brought in by private race from the Little Kyeburn Stream; pipe-line, 750 ft.; pipes, 19 in. to 11 in.; pressure, 165 ft.; face, from 10 ft. to 25 ft., mainly through old tailings from Surface Hill, with from 2 ft. to 3 ft. of wash on the bottom; elevator, 30 ft.; area, 14 acres. Three men.

No. 4 Claim, Milkman's Gully: Face, from 15 ft. to 20 ft. in depth; wash, 2 ft.; elevating, 22 ft. Plant consists of 2,700 ft. of pipes, reduced from 19 in. to 11 in. in diameter. Four heads of water obtained from the Government water-race. Three men.

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W. Guffie, Main Gully.—The ground is from 10 ft. to 13 ft. in depth; wash, 6 ft. Four heads of water are brought in from the Government water-race. 1,600 ft. of pipe-line, reduced from 19 in. to 13 in. diameter; pressure, 125 ft. Three men.

Naseby Gold-dredging Company (H. Ravenwood, manager).—Four heads of water are brought in from the Government water-race. The claim is worked by hydraulic sluicing and elevating; pipe-line, 3,000 ft. in length. Pipes reduced from 19 in. to 11 in. diameter; pressure, 130 ft. Face is 18 ft. deep, and elevator is lifting 29 ft. Boxes are 48 ft. long by 3 ft. wide, with angle-iron ripples and matting. Ten men are employed.

Reed Bros. (J. W. Reed, manager).—Elevating claim; maiden ground. Face, 7 ft. to 10 ft.; wash, 3 ft.; elevator lifting 16 ft. Four heads of water are brought in from the Government water-race; pipe-line, 600 ft. long; pipes, 19 in. to 11 in. diameter; pressure, 160 ft. Three men employed.

Ah Fong and Party.—Elevating claim of 13 acres. Four heads of water are brought in from the Government water-race; lift, 20 ft. Three men employed.

Tuck You, Main Gully.—Two men ground-sluicing with one head and a half obtained from Government water-race.

Lock Lung and Party, Hogburn Creek.—Elevating claim in old tailings from Surface Hill. One head and a half purchased from Hewitt's private water-race comprises the water-supply.

Eight or nine parties of Chinese are sluicing into Main Gully.

W. Hendrickson, Spec Gully.—Ground-sluicing with one head of water obtained from the Government water-race.

William Bertram, Spec Gully.—Ground-sluicing with two heads of water from the Government water-race.

Spec Gully.—About thirty Chinese miners are employed ground-sluicing and fossicking at the head of Spec Gully. They are supplied with water from the Hit or Miss Race. Also about fifteen fossickers buying water from the Government water-race.

Inder and Party, Spec Gully.—Elevating claim of 9 acres; water obtained from the Hit or Miss Race.

L. Hore, Enterprise Gully.—This claim has been converted into an elevating claim. Three heads of water are purchased from the Government water-race and stored in a dam; pressure, 80 ft.; pipe-line, 800 ft.

Matthew Young, Enterprise Terrace.—Face, 38 ft.; wash, 5 ft. Water brought in six miles from the East Eweburn Creek. Claim, 6 acres. Three men.

A. and J. Brown, Enterprise Terrace.—Ground-sluicing with two and a quarter heads of water obtained from the Government water-race. Two men employed.

Enterprise Mining Company, Enterprise Gully (W. Newman, manager).—This company has one claim above the Government water-race; and is working in the "Maori bottom." The auriferous wash is 6 ft. to 8 ft. in depth, lying on a clay bottom, and having above it a 6 ft. band of clay and 20 ft. of "Maori bottom." The water is obtained from a private race from the West Eweburn. There is one man in the "Maori bottom" Claim. The No. 2 Claim is an elevating claim in Enterprise Gully below Inder and party's claim. Two men are employed at the claim in Enterprise Gully. Elevator lifting 18 ft.; 900 ft. of piping in use; 120 ft. of boxes.

F. Reed, Main Gully.—Elevating claim. Four heads of water from Government water-race; lift, 18 ft.; pressure, 140 ft. Two men.

Henry Moore, Enterprise Gully.—Special claim of 8 acres. Supplied with four Government heads of water. Elevator pipe-line is 500 ft. in length, reduced from 19 in. to 11 in. diameter; nozzle pipe-line, 400 ft., reduced from 11 in. to 7 in.; face, 13 ft.; wash, 2 ft. Two men employed.

R. Moore, Enterprise Gully Spur.—Ground-sluicing in shallow ground.

Inder and Brown, Enterprise Gully (J. Marslin, manager).—Claim, 21 acres; face, 17 ft.; wash, 5 ft. to 6 ft. Four heads of water obtained from the Government water-race; pipe-line, 900 ft. in length, reduced from 19 in. to 11 in. diameter; pressure, 120 ft.; elevating, 23 ft.; working "red wash." Three men employed.

M. Lennane, Coal Pit Gully Spur.—Ground-sluicing. Water brought in six miles from Butcher's Gully; 500 ft. of 7 in. pipes used. One man.

M. Young, jun., and J. Beck, Coal Pit Gully.—Ground-sluicing. Two men employed.

Hewitt and Beck, Coal Pit Gully.—Ground-sluicing with water from Band of Hope Water-race.

Isaac Parfitt, Little Kyeburn.—Special claim of 10 acres, elevating; water-supply obtained from a small private water-right; ground shallow. One man employed.

"Maori Bottom."

W. Dowdall, Main Gully.—Ground-sluicing on the west side with one head and a half from the Government water-race.

R. Moore, Main Gully.—Ground-sluicing on west side with one head and a half from the Government race.

George Currie, Main Gully.—Ground-sluicing on west side with one head from Government race.

Lee Gin, Main Gully.—Ground-sluicing on west side with one head from Government race.

Barrat and Lennane, Main Gully.—Ground-sluicing above the Government water-race with water from the Enterprise Company.

East Side of Main Gully.

P. Botting.—Ground-sluicing; two heads from Government race.

L. Botting.—Ground-sluicing; two heads from Government race.

Kong Sing.—Ground-sluicing; one head from Government race.

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Joe Leys and Party, Main Gully.—This party have taken up a claim to work ground partly "Maori bottom" and partly blocks of original surface.

These claims in the "Maori bottom" are now just about paying wages. There is about 26 ft. of overburden to shift before the auriferous seam is reached, and this combined with a poor water-supply and little fall for discharge of tailings reduce the value very considerably.

J. Brown, Upper Kyeburn.—Claim at the head of School Flat. Ground-sluicing.

Phillip Beer and Party, Upper Kyeburn.—Claim situated in Red Gully. Four heads of water are brought in five miles from Timber Creek, and four heads from Main Creek. Elevating claim. Three men.

William McLelland, Rip and Tear Terrace, Upper Kyeburn.—Ground-sluicing. Water from Main Gully. Three men.

Stewart and Sons, Upper Kyeburn.—Ground-sluicing with water from German Creek.

Sun Tye and Party.—No. 1 Claim: Ground-sluicing at Dinah's Creek. No. 2 Claim: Ground-sluicing at Monk's Terrace. Four men employed.

Hamilton's.

These diggings are now practically deserted. About seven heads of water from the Pigburn Creek are available on this field. The water is used for ground-sluicing by Roberts and Son, and also by Roberts and party.

Patearoa.

Patearoa Hydraulic-sluicing Claim, Patearoa.—This is a privately owned hydraulic-sluicing claim. There is deep ground in the claim, and at the time of inspection some terrace-ground was being sluiced away. Seven heads of water are brought in from the Sowburn Creek. Height of lift, 20 ft.

Lusher and Party.—This party are working on the Sowburn, and Hambly Bros. on the Taieri River above Patearoa Station.

Upper Taieri River.

Fortification Hydraulic-sluicing Company, Red Swamp, Lammerlaw Ranges.—The prospecting paddock was sunk to a total depth of 52 ft. in the middle of the flat. Rough stony material was met with to a depth of 30 ft., carrying a little gold. A further 22 ft. was sunk through. This consisted of a compact schistose grit, but non-auriferous. At this depth the limit of the power was reached, and the flat was not bottomed. While awaiting the arrival and erection of the elevating plant, Swede's Gully and other shallow ground is being sluiced out. The race is four and a half miles long, and is to be recut 4 ft. wide to enable it to carry thirty heads of water. A pressure of 700 ft. is available, and with plenty of power the elevator will have a 10 in. throat-piece and 15 in. dirt-pipes. The above information was furnished by Mr. J. T. Johnston, manager of the Bakery Flat Sluicing Claim.

Canadian Flat Hydraulic Sluicing and Elevating Company, Upper Taieri.—This company was formed to work a claim on Canadian Flat by hydraulic sluicing, and, in addition, to generate electricity at the Taieri Falls and transmit the power to wherever required. A considerable amount of money was expended in the partial construction of a race to bring water on to the claim. Before the race was completed the company went into liquidation. At the time of inspection the plant was not on the claim, but was lying at the Outram Railway-station.

Idaburn.

Wheeler and Party's Sluicing Claim, Idaburn.—Ground-sluicing. Two men.

Blackstone Hill.

William Wade and Son, Blackstone Hill.—Ground-sluicing.

McLennan and Mate, Blackstone Hill.—Still ground-sluicing at Sam-the-German's Gully.

Robert Johnson, Hill's Creek.—Ground-sluicing with a poor supply of water. Two men generally at work.

C. Rose, Hill's Creek.—Still ground-sluicing at Pennyweight Flat. This piece of ground is becoming more difficult to work owing to increasing depth.

William Hickey.—Doing a little sluicing at Hill's Creek.

Turnbull and Hayes.—Ground-sluicing on a face of the Rough Ridge.

McAdie Bros.—Ground-sluicing on German Hill, in Ida Valley.

D. Nicoll.—Fossicking at Garibaldi.

J. Wilkinson and F. Cavendower.—Fossicking on the Gimmerburn Creek.

St. Bathan's.

Shamrock Gold-mining Company, Hawkdon Station, St. Bathan's (J. Mooney, manager).—Twelve heads of water are brought in from the Manuherikia River. The ground averages 12 ft. in depth, and is very rough. The bottom is so disjointed and broken that it is difficult to clean up. Eight men are usually employed.

Garty and Gallagher's Claim, Surface Hill, St. Bathan's.—Early in the year the party was working as steadily as an insufficient water-supply would allow. The water was being bought from the Scandinavian Gold-mining Company, and at the end of the year this company had acquired possession of the claim.

Scandinavian Gold-mining Company, St. Bathan's (Neil Nicholsen, manager).—The Otago Race having broken away, only one elevator was at work at the date of inspection. The water

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which was lately in use near the St. Bathan's Township has been transferred to shallow terrace-ground lower down Muddy Creek. When the claim was last visited work was progressing satisfactorily. No. 1 elevator, capable of lifting 83 ft., was being shifted, and a temporary elevator, to lift 65 ft., was in position to keep the water down in the paddock. No. 2 elevator is used to strip the ground ahead of No. 1, but it will shortly be disconnected, and shifted on to the claim previously known as Garty and Gallagher's, but which is now the property of the Scandinavian Gold-mining Company. Good returns had been obtained from this claim with an inadequate water-supply, and it should prove a valuable property to the company. A good supply of water can be brought on to it under a pressure of 330 ft. A large area is being ground-sluiced near the Hill's Creek Road, but more satisfactory results will be obtained when a better supply of water, with increased pressure, is brought to bear upon the ground. Twenty-six men are usually employed.

United M. and E. Company, St. Bathan's (P. T. O'Regan, manager). — The present elevator, lifting 82 ft., has been in position over eighteen months. Renewals chiefly take the form of new throat-pieces. These are 5 in., inside diameter, when new, but wear away to 7 in. in a few weeks, and are then discarded. Elevator-jet, 3 in. diameter. Dirt-pipes, 14 in. diameter. In the bottom of the paddock there is a second lift, elevating 22 ft. Work is progressing favourably, and the claim is in good working-order. Two surface nozzles are used to blow away the top material, which is mainly non-auriferous, in advance of the elevator. The bottom of the present working-paddock is over 200 ft. from the original surface of the hill. Seven men are usually employed.

Hanrahan's Sluicing Claim, St. Bathan's. — P. Hanrahan has a small elevating plant, discharging tailings into Muddy Creek Tail-race. He is supplied with three heads of water from the Scandinavian Company's race.

Cambrian's.

Shepherd's Flat Claim, Cambrian's.—After lying idle for some time this claim and plant have been let on tribute to P. McCarthy and Gilbert O'Hara, who are hydraulic sluicing and elevating. Ten heads of water are brought in from Dunstan Creek. Pressure, 100 ft. Height of lift, 10 ft. Two men employed in the claim.

Vinegar Hill Hydraulic-sluicing Company, Cambrian's (Thomas Morgan, manager). — This company have acquired Mr. Ewing's races from Shepherd's Creek and Brown's Creek, bringing about twenty heads of water on to the claim. The ground is very rough, and the claim is blocked with falls from the sides. The stones are hand-trucked out of the claim. Nine men are usually employed. During opening-out operations the position was rather cramped. Most of the difficulties have been surmounted, and a good face has been opened out. The heavy stones which form the surface layer are now swept off in advance of the working-face. By this means the working-paddock is kept comparatively free. The heavy stones in the paddock are not now trucked out of the claim, but a body of water under a pressure of 350 ft. is brought to bear on them, blowing them aside. When the top 40 ft. is swept off, a face fully 100 ft. high is left to be broken down. The wash is swept along a run of boxes 90 ft. in length and having 24 ft. of undercurrent, and finally passes along a ground-sluice fitted with cocoanut-matting and angle-iron ripples. During steady sluicing operations six men are employed.

Fordham and Gay's Hydraulic-sluicing Claim, Cambrian's. — When water is available two men find steady employment in this claim. Owing to insufficient pressure the material cannot be lifted high enough, and the tailings require to be blown away from the end of the boxes owing to insufficient fall in the dump. The most payable ground in the flat is now almost worked out. Since the previous inspection of this claim the plant has been shifted into an adjoining gully, where sluicing and elevating have been commenced on the site of old workings. Pressure, 127 ft. Height of lift, 12 ft.

Matakanui.

Ewing and McConnochie's Sluicing Claim, Tinker's (J. Naylor, manager).—This company is still carrying on on the usual lines. Amalgamation with the Sugar-pot Company, which was very desirable during shortage of water, is not now so much desired, as the latter part of the season has seen all the claims provided with a plentiful water-supply.

Undaunted Gold-mining Company (Limited), (T. C. Donnelly, manager).—Operations have lately been carried on in ground purchased from the Sugar-pot Company with good results. Six men employed. Recent operations having carried the lower boundary of the claim up to the adjacent properties, the plant has been shifted to the upper end of the claim. A deep face lying on a high bottom is being sluiced off, and ground 50 ft. deep will soon be elevated. The present face is 40 ft. high, but falls well back under the nozzle. Twelve heads of water are brought in by four races, the longest being that from Chatto Creek, twenty miles in length. A pressure of 400 ft. is used on the elevator and 370 ft. on the breaking-down line.

Sugar-pot Elevating and Sluicing Company (C. Huddlestone, manager).—This party had their water on for the first time since the holidays, so that at the time of the inspection the drainage-water was not yet out of the paddock.

Tinker's Gold-mining Company, Tinker's (J. Naylor, manager).—This company is the outcome of an amalgamation of Ewing and McConnochie's and the Sugar-pot properties at Tinker's. By this means in seasons when there is a shortage of water the working-supply can be directed on to one claim. The present water-supply consists of seven heads, which is all brought on to deep ground at present in Ewing and McConnochie's claim. The ground is 20 ft. deep and very stony. Lift, 28 ft.; dirt-pipes, 15 in.: pressure, 500 ft. From five to seven men are employed. The main pressure pipes here have been extended over a mile to command some shallow sluicing-ground when the water is too low for elevating. Later on, when all available easily worked ground has been worked out, the water will be brought on to the Sugar-pot property, which will then be subjected to extensive developments.

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J. Symes and Son's Sluicing Claim.—This party has acquired the ground lately prospected and abandoned by the Klondyke Gold-dredging Company, and are now engaged bringing their water on to it. The ground averages 12 ft. in depth, and according to prospects should pay well for sluicing, especially since the overlying clay can be run off before the bottom is touched. The line of pressure-pipes has now been laid on to the Klondyke Claim, and sluicing operations are in full swing. The flat averages 12 ft. in depth, but sluicing is confined to some shallow ground at present. Three men are employed.

Matakanui Gold-mining Company, H. Norman, manager.—The ground being worked at time of last report proved too difficult for the water-supply, and a start has now been made in ground adjoining the Undaunted Company. The top stuff was sluiced off preparatory to putting in a lift. Ground 60 ft. deep is now being elevated. The bulk of the overburden is auriferous, the best gold lying on the bottom. Pressure-pipes, a double line of 15 in., tapering off to 9 in. and 7 in. Under a pressure of 200 ft. the material is elevated 35 ft., and discharged over 18 ft. of boxes. Eight men are generally employed.

Dry-bread Diggings.

H. Glassford and C. Johnston.—Ground-sluicing, with small water-rights.
C. Wilson.—Ground-sluicing.
R. Jones and Morgan.—Ground-sluicing on the Lauder.
G. Jones and Son.—Ground-sluicing at Cambrian's.

Devonshire Diggings.

Nothing doing at present.

SPRINGVALE.

Springvale Sluicing Claim, Springvale, near Alexandra South (J. Gartley, manager).—When the claim at Springvale was worked out the plant was shifted to Long Gully, where ground-sluicing operations are now being carried on. Three men employed.

ALEXANDRA.

Alexandra Bonanza Gold-dredging and Sluicing Company, Galloway Flat (H. Martin, manager).—The race, eighteen miles in length, brought in from Manorburn Creek, Greenland Swamp, is 8 ft. wide in the bottom, and has from 12 in. to 16 ft. fall to the mile. The race is carrying sixteen heads of water, but will carry thirty-five heads in the springtime. A full supply of water was not available at time of inspection, much of it being locked up by frost. The dam also was unfinished. Three shifts of two men each are employed, and three extra men are required on the race for maintenance. The material operated on stands in the back face to a height of 60 ft., and is of a very free nature, having few large stones and overlying a soft sandy bottom. Ground-sluicing is the method adopted, and the material is sluiced away through a run of boxes 3 ft. wide and 450 ft. in length. The run has a fall of 3 in. to the 12 ft. Owing to the little fall in the bottom of the claim the material does not travel freely, but requires to be driven. At present there is a good dump for the tailings. From the penstock the water is brought on to the claim by a pipe line 1,500 ft. in length, the pipes ranging in diameter from 24 in. to 9 in. Pipes of a larger diameter would be more serviceable as a pad-rock plant in this claim, the sluicing-nozzle having only a 3½ in. tip. The pressure available on the claim is 90 ft. vertical. The boxes are fitted with angle-iron ripples, flat-bar ripples, and coconut-matting. A small spread of side tables receives the fine material from a short undercurrent. The sample of gold obtained is of a very fine nature, but weighs well. At a subsequent inspection the newly appointed manager, W. Hansen, was widening the boxes and endeavouring to get more fall by cutting the tail-race deeper. A small elevator, capable of lifting about 12 ft., may be put in. This is rendered necessary by the flatness of the roof in the bottom of the claim.

Tucker Hill Sluicing Company, Alexandra, Rivers and Gartley, owners.—Operations are still confined to sluicing shallow alluvial deposits lying on hard-rock bottom on the foothill slopes of the Raggedy Ridges. With a fair water-supply and a good dump for tailings into the Manuherikia River gorge, a large area can be quickly gone over. The dam is being enlarged and the breastwork heightened. Five men usually employed.

Coalgordie Diggings, Tucker Hill.—Some parties living on the wash struck small patches of payable alluvial, which were soon worked. This field gave employment to about ten men for a short time.

Galloway Diggings, Galloway.—A number of claims were pegged out at the Galloway rush. The ground was of a payable nature, but the area is restricted, and the total absence of sluicing-water prevented the field from being tested. Appleton and party and Thomson and party are driving out the wash and carting it to water.

Kane and Son, Blackman's Creek.—Ground-sluicing. Two men employed.

P. McCarthy, Blackman's Creek.—Two men employed ground-sluicing in Field's old claim.

Doctor's Point Sluicing Claim, Alexandra South.—This was the claim formerly held and worked by Nicholas Andersen and party, and from which a large amount of gold was taken. Work is to be resumed this summer by G. Baker and party. A small water-supply is brought in from Shanty Creek and stored in a dam. The claim will be a difficult one to work successfully with the totally inadequate water-supply.

CLYDE.

Anderson and Kibbler, Sluicing Claim, Clyde.—Ground-sluicing at the head of the Waiberikeri Creek, with water from Leaning Rock Creek.

Buckley and Joe.—Ground-sluicing on the terrace above Shepherd's Flat, Fraser River.

Hooley and McDonnell.—Working the bed of the Fraser River below Shepherd's Flat.

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Cromwell.

Quartz Reef Point.—Several small parties engaged prospecting and otherwise in this locality.

Bannockburn.

Thomas Rooney's Claim, Bannockburn.—This claim is situated near the Bannockburn Bridge. Two tunnel tail-races had been driven in at different levels in the hope of striking the main bottom of the old river-bed on the terrace, but the ground has turned out to be deeper than was expected. The tunnel at present in use is 308 ft. long, with an open race-outlet to the river 300 ft. in length. A paddock has been sluiced out to a depth of fully 110 ft. without reaching bottom. Three heads of water are used. Four men generally employed. On the 22nd January, while pricking a block in the head of the tunnel to put in a charge of dynamite, the material broke away, and Rooney and Jones were swept out of the tunnel; fortunately the men escaped with a few bruises. On a recent visit I learned that, owing to the depth of the ground and the supply of water being inadequate, the claim has been abandoned without the bottom having been reached.

Kawarau Gorge.

J. Robertson's Claim, Robertson's Terrace.—J. Robertson has been prospecting a high terrace for some two years. Sluicing was carried on for some time until payable gold was found on the bottom. The water being inadequate, the wash was then driven out. The seam of wash runs from 3 ft. to 9 ft. in thickness, and lies on a very uneven bottom, from which some very rich pockets had been taken. The terrace is over 200 ft. higher than the present level of the Kawarau River, but the wash contains "Maori," black sand, and very coarse gold. The owner informed me that drives at each end of his area have proved a total length of 32 chains to be auriferous over an average width of 60 ft. Three men are employed. Very little timber is required, as the wash is very compact.

Gordon and Rowe.—Sluicing at the other end of the terrace with water from Walker's Gully.

Mr. W. Foreman.—Two men engaged sinking and driving on the same terrace.

McElligot's race from Mount Pisa, if amalgamated with a race from Deep Creek, would bring a good body of water across the river on to the terrace, from which there is a splendid fall for ground-sluicing.

Further up the Kawarau Gorge, W. Ritchie and party, a Cromwell syndicate, are bringing in Kennedy's water-race on to a terrace of about 60 acres in area. This is a similar terrace to Robertson's, lying on a high point opposite the Roaring Meg Stream, and 230 ft. above the present level of the Kawarau River.

Cardrona.

Little's Claim, Cardrona.—Alluvial mining in this locality has been in a backward state for some time. The whole valley had been pegged off as dredging areas, but through the failure of a few the greater number of the areas were thrown up. On one of these Walter Little is erecting a hydraulic plant formerly in use at the King Edward Claim, Arrowtown. The race is now under construction, and when the plant is in full swing it is expected that the ground will prove payable for the method employed. Later information from this claim is that the work done has proved the ground remunerative for hydraulic sluicing.

Loft and Party.—This party have been driving out the wash above the township for some time. A dip drive 1 in 3 and 140 ft. in length is the haulage and travelling road. The ground is 50 ft. deep, and very rough. Very little timber is used, as the material is compact. The ground being worked is drained by an underground tail-race brought up through the worked ground as the work progresses.

Enterprise Terrace.—Patrick Fahey is ground-sluicing with water from Rhodes Gully. There are also several others prospecting at various points.

Criffel Face.—There are now only two parties sluicing. The slippery nature of the face renders it difficult to keep paddocks or tail-races open. Water is brought on to the face from the head of the Roaring Meg, a distance of four miles.

Macetown.

Several parties are engaged ground-sluicing in this locality.

Arrowtown.

King Edward Hydraulic Sluicing and Elevating Company.—This company has gone into liquidation, and the plant is being removed to Mr. Walter Little's claim, Cardrona.

Arrow River.

Arrow Big Beach Hydraulic Sluicing Company.—This company has gone into liquidation.

Arrow Falls Sluicing Company (J. A. Millar, manager).—The centre wall (18 ft. by 12 ft.) has been lengthened 14 chains. The work is heavy and the ground very rough. The two tail-races are now well advanced, and the claim is assuming an appearance of order; some ground ahead is expected to be worked to advantage without interruption from floods. The 3-ton steam-crane used for stacking stones is working well. A suitable bridge for a travelling-way has been placed over the channel. Five men are employed.

Messrs. Hay Bros.—A new plant has been procured to work a claim on the Arrow River, one mile below Arrowtown. This is new ground, which has been proved as being highly auriferous.

Arthur's Point.

Arthur's Point Hydraulic Sluicing and Elevating Company, Arthur's Point, Shotover River (H. Angelo, manager).—This claim is still being worked by a party of tributers.

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Moonlight.

Moonlight No. 1 Sluicing Claim, Moonlight, Queenstown.—Sanders and another have taken this claim on tribute, and are taking a deep cut into the back of the terrace with the object of proving its value. The ground is deep for the water-supply available. Three men are employed.

Moonlight No. 2 Sluicing Claim, Moonlight, Queenstown.—This claim was shut down when visited. After considerable expenditure in bringing in water and getting plant on to the claim, the results from the first paddock were discouraging. The claim was then run for a short time by the mortgagee, but with unsatisfactory results. It was then finally closed down and the plant offered for sale.

Shotover.

Stevenson and Aspinall's Sluicing Claim, Skipper's Point.—The water-right of this party is not a very permanent one. Water is brought in from Brown's Creek and stored in two dams, which hold only three hours' supply. The back face of this claim is 200 ft. high, but there is now a fair amount of comparatively shallow stripped ground to sluice away. An open tail-race discharges into Skipper's Creek, while the other fall is towards the Shotover River through a tail-race tunnel. This tunnel has a fall of 1 in 10 for part of its length and 1 in 9 for the lower part. When a large block occurs in the tunnel tail-race it is cleared by running a service-pipe line up from the lower end of the tunnel; the water is turned on after the men have left the tunnel, and the block is sluiced away without risk to life. The bottom layers of wash in this claim carry very large and heavy stones. Two men working in the claim.

Skipper's Sluicing Company, Londonderry Terrace, Skipper's Point (J. Corbett, manager).—This claim is situated on Burke's Terrace. The face is very high, but has been sloped back for a depth of 70 ft. from the top. Owing to the irregularity and extreme hardness of the rock bottom the manager has put in a "shooting gallery," lifting about 8 ft. perpendicular, in order to clean up the present piece of bottom. About eight heads of water are brought on to the claim under a pressure of 100 ft.; there is about 10 ft. of gold-bearing wash in the face. The wash contains a large quantity of black sand. The tail-race tunnel is working satisfactorily now; as the work is being carried on some distance away, the amount of material discharged through the tunnel can be regulated. A box having a middle hinged door for signalling purposes is placed in the tunnel where a block is most likely to take place—that is, where the fall is 1 in 12. A rise of 6 in. of the material in the box swings the door, which is connected with a wire, and raises a flag in the claim. By turning away the nozzle the flow of material is lessened and the obstruction is cleared by the force of water alone.

Robert Johnston, Pleasant Creek Terrace, Skipper's.—This claim comprises the terrace ground between Stony Creek and Pleasant Creek, the water being brought in from the latter creek; water is dropped over the face to sluice off the top layers, and the bottom layers are blown down with hose and discharged into Stony Creek at its junction with the Shotover River. The water was off at the date of inspection, and there was no one in the claim, which is not being worked in a vigorous manner.

Davis's Sluicing Claim, Skipper's.—This claim is situated on Stony Creek Terrace, Skipper's. A race six miles long brings in twelve heads of water from the right- and left-hand branches of Stony Creek. The face is about 300 ft. perpendicular, and carries gold in several layers. The top material is broken down for some distance by water running over the face, then a nozzle is played upon the face about midway. When the face is well sloped back a paddock plant is put in position, and work can then be carried on without any risk from large falls from the face. The total length of open tail-races in present use is 1,800 ft., and the whole distance is paved with about 40 tons of steel rails. These rails are laid lengthwise, and, as the tail-races have a fall of 8 ft. in 100 ft., no trouble is experienced in getting rid of the tailings. The gold varies in quality from very coarse to fine, the saving of the latter being hindered greatly by large quantities of black sand. There are over 2,000 ft. of pipe-lines on the claim.

Upper Shotover.

Davis Bros.' Claim, Skipper's Point. — Four men are employed cutting in a race three miles long to work the ground on Bill Guy's Terrace. Owing to the rough nature of the country this work has already occupied a year and a half. (Information obtained from Mr. Davis, Shotover Quartz Reef, Skipper's.)

Muddy Creek Terrace Sluicing Company (Limited), Skipper's Point (J. Collins, manager).—Water is being brought in about a mile and a half from Stockyard Creek to work deep terrace ground above the sandhills. Good progress is being made with the construction of the race, and a start should be made sluicing this season.

Dwan, Cummings, and Costello.—Sluicing terrace ground high up the Shotover River.

Peat and Helm's Sluicing Claim, Skipper's.—The owners are working with Smith's hydraulic-suction system. Half a head of water is brought in from the Sandhills Creek and stored in the dam. The plant consists of 4,000 ft. of 8 in. piping. 21 ft. of suction-pipe is used with a 1¼ in. jet. About two heads of water are brought on to the claim under about 200 ft. of pressure.

Rogers and Johnston, Skipper's.—This party are using water brought in from Ballarat Creek to work the shallow river-bed by the hydraulic-suction system. The plant consists of 11 in. and 8 in. pipes. The top stuff was being sluiced off before putting on the plant.

Lynch and Hamilton.—This party have acquired Messrs. Lister Bros.' plant at Sawpit Gully, near Arrowtown, and are shifting it on to their claim near the Sandhills. This forms part of the claim formerly worked by the Riley Electric Gold-dredging Company.

William Palmer, Shotover.—Ground-sluicing. One man.

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Monk's Terrace Sluicing Claim, Skipper's Point (P. Lynch, manager).—This claim is situated on a high point above the Shotover River. The ground is about 60 ft. deep in the back face, with layers of rough wash carrying fine gold, the bottom carrying the roughest gold; pieces ranging up to 28 dwt. have been found. A race three-quarters of a mile long brings about four heads of water into a siphon across the river. This is stored in dams giving a pressure of 100 ft. on the claim. The plant consists of 1,800 ft. of piping ranging from 15 in. in the siphon to 9 in. and 7 in. in the service-pipes. The material is discharged down an open tail-race paved with about 300 ft. of light iron rails.

Smith and Son's Claim, Shotover.—This party was busy wing-damming the river below the Shotover Quartz Company's mine, where good gold is expected to be found. As the river was approaching a low winter level, the erection of the wall was being satisfactorily proceeded with. The plant was not in position.

Nevis.

Our Mutual Friend Hydraulic Sluicing and Elevatiny Company, Nevis (Masters and Adie Bros.).—Several races carry six heads of water to the claim for sluicing and elevating. Ground, 30 ft. deep; height of lift, 30 ft. Flushing-water for the tailings is brought in from Schoolhouse Creek. Dirt-pipes, 11 in. diameter; size of jet, 2½ in. diameter; size of throat, 6 in. diameter. The boxes are 2 ft. wide and paved with stones. There is 5 ft. of gold-bearing wash in the claim, most of which was driven out in the early days of mining on the Nevis. Four men are employed.

Robertson and Party, Nevis.—A race five miles long from Deep Creek brings water into the Commissioner's Creek race, which carries ten or twelve heads of water on to the claim in a full season. Depth of ground, 20 ft.; pressure, 400 ft.; height of lift, 42 ft.; dirt-pipes, 12 in. diameter; size of elevator-jet, 2¾ in. diameter. Four men are employed.

Keep-it-Dark Gold-mining Company, Galvin's Terrace, Nevis (J. H. Robertson, manager).—This claim has been lying idle for some considerable time From information received it appears probable that operations will be resumed shortly. The shaft and ladder-ways were in good order so far as could be seen above the water. A prospecting-drive is to be started from the shaft-bottom to search for a lead of gold. If this is found the ground will be blocked out. Shortly after this visit a start was made to drive for the wash. An adit has also been started from the fall of the terrace to reach the shaft, in order to lessen the height to which the water requires to be pumped.

Upper Nevis.

Upper Nevis Sluicing Claim, Cinnabar Flat.—A small water-supply was brought in and a hydraulic plant laid down to test the ground. There is a good area of ground here upon which a large amount of prospecting has been done. In this instance the trouble lay in the fact that sufficient water could not be brought on to the ground. Stony Creek carries a good volume of water some seasons, but, on the whole, this is an uncertain supply. The claim has been shut down all this season. Plant still standing.

Joe Park's Hydraulic-sluicing Claim, Upper Nevis.—Area of claim, 56 acres. Six heads of water are brought in a distance of two miles from German Gully. The pressure-pipes range from 18 in. to 7 in. diameter; pressure, 220 ft.; height of lift, 18 ft.; dirt-pipes, 11 in. diameter; size of jet, 3 in. and less, according to the water-supply. The ground is 10 ft. deep, and is worked down to the false bottom. The gold is very fine, and has cinnabar associated with it in the wash. Gold-saving appliances are ripples and snow-tussocks. There is also an undercurrent at the tail fitted with a quicksilver plate. Four Chinese employed.

McMillan's Sluicing Claim, Upper Nevis.—This plant has been shifted from the terrace on to the flat, and an elevator put in. There are 3,500 ft. of pressure-pipes, ranging from 11 in. to 9 in. diameter; vertical pressure, 120 ft.; height of lift, 12 ft. Six heads of water are brought in by seven miles of race from Wright's Creek, and two heads from Drummond's Creek. The ground is shallow and the dirt favourable for elevating. Four men employed.

McDonald's Hydraulic Sluicing and Elevating Company, Upper Nevis.—This claim is held by an Invercargill company. At the time of inspection the manager was getting the plant in order again to resume work after the frost was away. Seven heads and a half of water are brought in four miles. A new race, to give a pressure of 375 ft. vertical on the claim, is to be constructed this season. Height of lift, 28 ft.; vertical pressure, 200 ft.; dirt-pipes, 12 in. diameter; size of jet, 2¾ in. The gold is shotty in character, the material treated being fine quartz drift. Six men employed.

O'Connell and Graham, Hydraulic-sluicing Claim, Upper Nevis.—This claim was not in full working-order, as the resumption of operations has been delayed owing to the lateness of the season. The water was not all in, but with what was available the top material was being sluiced off before the elevator was put in. The ground is about 20 ft. deep. O'Connell stated that the gold-bearing wash does not extend into the flat, but, in common with all the claims on the Upper Nevis, the gold in this claim follows the lay of the terraces skirting the foot of the Remarkables range of mountains. Vertical pressure, 400 ft.; length of pressure-pipes, 1,200 ft.; dirt-pipes, 12 in. diameter; elevator-jet, 2¾ in. tip; size of throat-piece, 6 in. to 8 in. diameter. As is now well known, this sluicing plant secured good returns from ground abandoned as unpayable by a dredging company. The success of this party has induced a company to take up a flat claim above the sluicing claim for dredging purposes, and a dredge is being erected there.

Undaunted Sluicing Claim, Upper Nevis (R. Williamson, manager).—This company was formed for the purpose of turning portions of the river in the gorge, near Scotchman's Creek, and working the river-bed. A large flume capable of carrying the water in the river during low seasons has been constructed, and a substantial wing-dam thrown across the river to divert the water into the flume. The dimensions of the flume are: Length, 6 chains, having a total fall

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of 8 ft. 3 in.; breadth, 24 ft. for the first half-chain of length, drawing in to 12 ft. thereafter; the sides of the flume are 4 ft. high, and are constructed of 4 in. by 3 in. framing with 12 in. by 1 in. planking, the whole structure being well stayed, and a suitable gangway with hand-rails provided. The wing-dam is 120 ft. in length. The piles are 11 ft. long, sunk 7 ft. into the ground, and the wall is well breasted with large stones. Heavy swinging doors are let into the wall of the dam to allow extra water to escape during a rise in the river, but in spite of this precaution one section at the head of the flume had carried away in flood-time. The area of the claim is 100 acres, but a greater part of this is a narrow gorge, and an exceptionally low river will be required before this portion can be worked. The ground is about 14 ft. deep, and very rough. The gold is coarse. An under-shot water-wheel drives a Californian pump to keep the working-paddock dry. Eight to ten men will be employed when the claim is in full swing.

Waikaia.

Argyle Sluicing Company's Claim, Waikaia (J. Stewart, manager).—This season has been a good one for sluicing, and the claim had not as usual been closed down during winter on account of frost. There has been little alteration to the plant since last report, but under capable management and favourable circumstances sluicing operations have been steadily conducted. The depth of the ground is 35 ft., the bottom layers consisting of heavy wash. The surface deposit consists of an accumulation of tailings from former sluicing claims on the surrounding terraces. Pressure, 330 ft. vertical head; height of lift, 32 ft. The run of gold-saving boxes is about 120 ft. long, and provided with Venetian riffles and perforated plates on top of cocoanut-matting. Nine men are usually employed.

Winding Creek Hydraulic-sluicing Claim, Waikaia.—This company made a trial of the deep ground, but found that the water-supply was totally inadequate to work the claim with success. The property is now let on tribute to a party of working-miners, who are ground-sluicing. This party has had a steady season's work.

Gow's Creek Gold-mining Company, Waikaia (K. McLean, manager).—This claim is situated about six miles up Gow's Creek. A race has been brought in a distance of five miles from the upper reaches of the creek to command an alluvial flat, supposed to contain good gold. The race proved to be a costly undertaking, as the country was entirely unsuitable for race-cutting. The company holds first rights to thirty heads of water, and if the first plant meets with success an additional plant will be put on. At present the manager is engaged opening out a paddock, and has sunk 18 ft. through water-worn schist and quartz gravels. From appearances the ground will prove very rough. About six men are employed. Vertical pressure, 200 ft.; height of lift, 35 ft. The run of gold-saving boxes is 84 ft. long, and is provided with angle-iron ripples, perforated plates, and cocoanut-matting. The race has 13 ft. 4 in. fall to the mile. Later information regarding this claim is to the effect that operations did not meet with success. A further trial of the flat was made under new management, but the gold returns did not improve and the plant was finally closed down.

Piano Flat Gold-mining Company, Upper Waikaia (F. Hamer, manager).—This is a claim of 26 acres, comprising flat and terrace ground on the Upper Waikaia River. The company has large water-rights from Cameron's and Welshman's Creeks, and a race has been cut in a distance of nine miles to a point from which it is siphoned across the river to the claim. An attempt was made to bottom the flat, but at 26 ft. the limit of the power was reached without the bottom being struck. The adjoining terrace was then attacked; material operated on, being cemented, required extensive undermining before a fall would take place, and, having a weak pressure of water, this necestitated the nozzle being close up to the face. The attention of the manager was drawn to the danger to the men arising from large falls. Operations, however, did not meet with success, and the works have been finally closed down.

Nokomai.

Lion Hydraulic Sluicing and Elevating Company, Nokomai (D. McGregor, manager).—Last season a paddock was taken out to a depth of 85 ft. before bottom was reached, but owing to the advancing winter further developments did not take place. The material was elevated in one lift to a height of 112 ft. There is from 6 ft. to 8 ft. of gold-bearing wash on the bottom, but the great overburden is barren. This season an attempt was being made to pump the paddock out, preparatory to resuming sluicing operations. A large slip fell from the face, carrying away the dirt-pipes, the run of boxes and trestlework being canted forward. Without making any attempt to stay or stiffen the structure, the manager and six men began to clear the gold-saving appliances out of the boxes. While they were thus engaged the structure collapsed, and the manager and three men fell with it. The manager had a small bone broken in one leg, but the other men escaped serious injury. I have since been informed that the intention is to drain the paddock and then drive out the wash, keeping the paddock dry with the hydraulic pump. This will do away with the necessity for removing the overburden.

Victory Hydraulic Sluicing and Elevating Company, Nokomai (W. Franz, manager).—This claim is situated in Victoria Gully. Last season a dam was built to improve the water-supply and enable more constant work to be carried on. Franz and two men are now working this claim under tribute.

Nokomai Gold-mining Company (Limited), (W. Robinson, manager).—No. 1 Claim: This claim is being worked systematically, and with highly payable results. The run of boxes is well put up and strongly stayed; the ground averages 45 ft. in depth, and when opened out the faces stand well. Fifteen men are employed in and about this claim. The electric light is being used for night-work.

No. 2 Claim: A dam having an area of 17¾ acres has been made on Nokomai Creek. The breastwork is 40 ft. high. The ground in the claim is very rough, and requires a better water-

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supply than had been in use. The wash had been driven out in early times. Depth of ground, 15 ft.; height of elevator, 26 ft. About fifteen Europeans and Chinese are employed in and about this claim.

Copland's Sluicing Claim, Nokomai.—This is a ground-sluicing claim above the Nokomai No. 2 Claim. The water-supply is obtained from the by-wash from the Nokomai Race. One man employed.

ROUND HILL.

Round Hill Gold-mining Company (J. Ramsay, manager).—Working to the reef on the township side of the gully, where good results had been obtained from old ground driven out by Chinese. At next shift of plant the intention is to turn the Ourawera Creek and work across to the Pahia side, in which direction the main alluvial field of the future may be expected to be found. A log and stone hauling and stumping plant on lines derived from bush-logging engines has been erected in the claim. Pelton-wheel drive being used saves an enormous amount of heavy hand-labour formerly necessary to clear timber and boulders in the stripping, 40 ft. to 80 ft. overlying the pay-wash, which is found resting immediately on the andesites, which here form the country-rock.

Smith Gold-mining Company.—Work continued steadily up the creek.

Ourawera Gold-mining Company (J. Coulling, manager).—Opening out a new paddock, which is turning out very rough with timber and stones.

Harrison's.—A small ground-sluicing and elevating plant, taking up the bottom and sides of Jewitt's Gully.

OREPUKI.

As the frontage becomes worked out mining claims are gradually being extended back in the bush in the direction of Pahia and Round Hill. Two sawmill tramways having recently opened up the bush for some three miles, and access having become easier, areas of new ground payably auriferous are being discovered, and await the application of water, which is meanwhile in use on other parts of the field. Unfortunately the pressure obtainable is somewhat low and ill-adapted to clear bush and heavy stripping off the auriferous wash, which is known to be of a richer nature than is usually found in other localities.

Owing to the density of the forest undergrowth on the Longwood Range surface prospecting is a matter of extreme difficulty, and to this cause perhaps, combined with an inefficient supply of water, is due the fact that this goldfield has not received the attention which its importance appears to have warranted.

The usual number of mining claims continue working, and available water brought in is in full demand.

The beach-combing claims on the sea-beach at the mouth of the main sludge-channel continue to be regularly worked in accord with the amount of tailings discharged from the various claims.

PRESERVATION INLET.

Coal Island.—Several parties of miners, ten men in all, are engaged ground-sluicing, all on Nos. 1 and 2 creeks. Messrs. Cullen and Clark have been working on Moonlight, but are now removing to Davey's Beach, below No. 1. Mr. Ramsay is clearing bush and sluicing down the creek at No. 1. Claims are being worked at No. 2 by Hodge and Cooper, Peterson and Garrick, and by Johnston and Crerar. In each of these claims, the creek-beds having previously been worked, attention is now being paid to the sloping sides of the banks above the creeks; bush is cleared away and water brought in along the sidelings. The ground, though shallow, is very heavy, many glacial granite boulders ranging up to 100 tons in weight being distributed over the claims. The gold obtained is all water-worn, and rough or coarse and shotty in character; numerous small nuggets have been found, one nugget recently obtained—which I saw—weighing 9 oz. 11 dwt.

At the head of No. 2 creek Mr. Campbell is ground-sluicing, but the work is too heavy for one man. The comparatively narrow creek gully here opens out to a bush-covered flat, some 200 acres in extent, which, as the creeks become worked out, will no doubt receive attention from the miners. The flat is said to be commanded by water obtainable from a lake on an adjacent part of the island. Capital would be required to erect a dam at the lake-outlet, and the water would have to be conveyed to the claim in pipes. The strata comprising the flat is, where exposed, seen to consist of fine sands and gravels resting on sandstone bottom, but whether gold occurs in runs through the flat or is evenly distributed remains yet to be proved.

Glenny's Creek, The Neck.—McLennan and Riddell are ground-sluicing at the mouth of the creek. The wash in appearance resembles the glacial drifts on Coal Island, and the gold is similar in character.

McNamara's, Sealer's No. 1.—Treseder and Goodger are prospecting the terraces on the creek-banks.

Sealer's Creek, Puysegur.—A hydraulic-elevating plant is lying in a state of disuse; the ground not having come up to expectations, the company became defunct.

Fourteen men employed in the district in alluvial mining.

MILFORD SOUND.

Messrs. Watson and McQueen have taken up a sluicing claim at Madagascar Beach. Water-race to be brought in a mile and a half from the Wolf River. Wash, 9 ft. of quartz gravel covered by light bush.

Prospecting.—At least two parties are known to have traversed country lying to the eastward of Milford, the Government tracks having proved of great advantage in opening up country and affording means of ingress and egress to the parties; but unfortunately the weather had been unpropitious, and less useful work was done than had been expected.

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GOLD-DREDGING.

Working Dredges inspected.

Name of Dredge.	Owners.	Dredgemaster.	Remarks.	Dates of Visits.
Clutha River.				
Lioness, Rankleburn.. ..	Lioness Gold-dredging Company ..	I. Templeton ..	Dredge and life-saving appliances in good order	27/1/02
			Two boat-hooks and 100ft. of heaving-line required; winch-engine pinions to be guarded, and rowlocks provided for the boats	24/6/02.
			Dredge standing	29/9/02.
Paul's Beach, below Beaumont	Paul's Beach Gold-dredging Company	J. Herbert ..	Dredge and life-saving appliances in fair order..	28/1/02.
		G. Slater	Dredge standing	24/6/02.
New Paul's Beach, below Beaumont	New Paul's Beach Gold-dredging Company	J. Anderson ..	Dredge and life-saving appliances in fair order..	29/9/02.
Golden Reward, below Beaumont	Golden Reward Gold-dredging Co. ..	J. Cummings ..	Elevator driving-gear to be guarded; one buoy missing	29/1/02.
Golden Gravel, below Beaumont	Golden Gravel Gold-dredging Co. ..	T. Barnes ..	Dredge and life-saving appliances in good order	29/1/02.
New Golden Gravel, below Beaumont	New Golden Gravel Gold-dredging Company	" ..	" "	23/6/02.
			" "	29/9/02.
Champion, Beaumont ..	Champion Gold-dredging Company ..	J. Herbert ..	Dredge repairing; second boat lost	12/3/02.
			Dredge provided with second boat	1/4/02.
			Visited dredge in connection with fatal accident to William Bishop, engineer, on 20th June, 1902. Clothes caught in elevator driving-gear, and arm torn off	22/6/02.
			Heaving-lines required; otherwise dredge and life-saving appliances in good order ..	29/9/02.
Golden Glen, below Island Block	Golden Glen Gold-dredging Company	Not appointed ..	Getting ready for work; rules not posted, and coal-boat not at the dredge	29/1/02.
		J. J. Adair ..	Two life-belts required; otherwise dredge and life-saving appliances in good order.. ..	12/3/02.
		A. Gibson ..	Fencing down at the bows; otherwise dredge and life-saving appliances in good order ..	25/6/02.
		J. Wallace ..	Screen and elevator driving-gear to be guarded and stern fenced	1/10/02.
		" ..	Visited the dredge in connection with the fatal accident on the 30th October, 1902. Peter Muller, winchman, was caught by coil of ladder-line, one leg being cut off and other fractured. Muller died same night	1/11/02.
Britannia, Island Block ..	Britannia Gold-dredging Company ..	Not appointed ..	Dredge almost ready for work; rules not posted; coal-boat not on the claim; three life-belts required	29/1/02.
New Britannia, Island Block ..	New Britannia Gold-dredging Company	D. R. Jones ..	Dredge and life-saving appliances in good order	12/3/02.
		A. Gibson ..	" "	1/10/02.
Island Block, Island Block ..	Island Block Gold-dredging Company	W. Milne.. ..	New dredge starting work; not yet equipped with life-saving appliances; machinery efficiently guarded	25/6/02.
			Dredge repairing	1/10/02.
Golden Run, Miller's Flat ..	Golden Run Gold-dredging Company	H. Coutts ..	Dredge and life-saving appliances in fair order; second boat moored in the river, ahead of the dredge, and used as a ferry-boat. I wrote to the company's secretary on the 7th February, 1902, to provide a second boat for use at the dredge	30/1/02.
			Stern and well-hole fencing down; to guard screen bevel gear; new second boat provided ..	26/6/02.
Pride of the Clutha No. 1, Miller's Flat	Pringle and party	J. Pringle ..	Dredge and life-saving appliances in good order	30/1/02.
			" "	25/6/02.
Pride of Clutha No. 2, Miller's Flat	Pringle and party	J. Tough	" "	2/9/02.
Golden Gate, Miller's Flat ..	Golden Gate Gold-dredging Company	D. Ballantyne ..	" "	3/2/02.
			" "	2/10/02.
Otago No. 1, Miller's Flat ..	Otago Gold-dredging Company ..	R. Williamson ..	To erect well-hole fencing and guard screen bevel gear	3/2/02.
			Dredge and life-saving appliances in good order	25/6/02.
Golden Treasure, Miller's Flat	Golden Treasure Gold-dredging Company	T. Cornish ..	" "	26/6/02.
			" "	2/10/02.

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WORKING DREDGES INSPECTED—*continued.*

Name of Dredge.	Owners.	Dredgemaster.	Remarks.	Dates of Visits.
CLUTHA RIVER—*continued.*				
Majestic, above Miller's Flat ..	Majestic Gold-dredging Company ..	W. Williamson ..	Two boat-hooks required; two buoys to be repaired; guard-rail required on main engine and main driving belt	3/2/02.
			Dredge and life-saving appliances in good order	26/6/02.
Golden Bed, Ettrick	Golden Bed Gold-dredging Company	A. Maitland ..	Driving belts and ropes to be guarded; well-hole fencing to be erected; heaving-lines required	26/6/02
			Dredge and life-saving appliances in good order	3/10/02.
Ettrick, Ettrick	Ettrick Gold-dredging Company ..	T. Thompson ..	" "	4/2/02.
			Bar required across coal-door; also intermediate winch-pinion to be guarded	5/5/02.
			Dredge and life-saving appliances in good order	27/6/02.
			" "	2/10/02.
Excelsior, Ettrick	Excelsior Gold-dredging Company ..	J. Wallace ..	Visited dredge in connection with fatal accident on 2nd May, 1902. James Cummings, winchman, was killed through winch driving-pinion bursting, and flying piece striking him on the head	5/5/02.
			Fly-wheel to be guarded, and bar placed across the coal-door; screen and elevator driving-gear should be more securely guarded	27/6/02.
			Fly-wheel not yet guarded, nor elevator driving-gear properly guarded	2/10/02.
Gold Queen, Dumbarton Rock	Gold Queen Gold-dredging Company	A. King	Two life-buoys, measuring 15 in. inside diameter, are too small; otherwise life-saving appliances in good order	4/2/02.
Lady Roxburgh, Dumbarton Rock	Lady Roxburgh Gold-dredging Company	A. Bremner ..	Dredge and life-saving appliances in good order	3/10/02.
Gold King, Dumbarton Rock ..	Gold King Gold-dredging Company ..	O. Magnus ..	" "	4/2/02.
			Well-hole fencing pulled down; well-hole gangway and bar across the coal-door out of position; heaving-lines required; main belt-guard shaky and unsafe; fly-wheel to be guarded.	27/6/02.
Main Lead Hercules, Dumbarton Rock	Main Lead Hercules Gold-dredging Company	E. Butler ..	The bows and stem require to be railed in; otherwise the dredge and life-saving appliances are in good order	5/2/02.
	Joseph Sparrow	C. Olsen	Stern and well-hole fencing down; two boat-hooks required	3/10/02.
Endeavour, Dumbarton Rock ..	Endeavour Gold-dredging Company ..	A. Rennie ..	Second boat not kept at the dredge; platform to be taken out of coal-boat; bar required across the coal-door	5/2/02.
		J. Tough	Well-hole fencing down; 100 ft. of heaving-line required	27/6/02.
		F. J. C. McClure ..	Dredge and life-saving appliances in good order	3/10/02.
Roxburgh Jubilee, Roxburgh ..	Roxburgh Jubilee Gold-dredging Company	E. Butler ..	New dredge almost ready to start work	28/6/02.
			Screen-pinions to be guarded; one life-buoy, 15 in. inside diameter, too small; otherwise appliances in good order	3/10/02.
Teviot, Roxburgh	Teviot Gold-dredging Company ..	P. McVicar ..	Dredge and life-saving appliances in good order	5/2/02.
			Forward railing not in position; main fly-wheel, screen-belt, and bevel-gear guards to be erected	26/6/02.
New Teviot, Roxburgh ..	New Teviot Gold-dredging Company	D. Mitchell ..	Dredge undergoing extensive overhaul	14/11/02.
Molyneux Kohinoor, Coal Creek Flat	Molyneux Kohinoor Gold-dredging Company	J. Guyton ..	Dredge being shifted from Gibbs's Beach; life-saving appliances in good order	5/2/02.
			Well-hole gangway broken up; well-hole fencing down, and stern fencing weak; screen driving-gear and main rope-drive require to be guarded; bar required across coal-door	28/6/02.
			Dredge and life-saving appliances now in good order	1/10/02.
Coal Creek Flat, Coal Creek Flat	Coal Creek Flat Gold-dredging Company	S. Coard	Dredge and life-saving appliances in fair order, but all life-buoys too small	1/8/02.
			" "	2/4/02.
			Stern fencing down; heaving-lines required; well-hole gangway not provided	28/6/02.
			Guards off screen-pinions one boat-hook and 150 ft. of heaving-line required	4/10/02.
Gold Deposit, Coal Creek Flat	Gold Deposit Gold-dredging Company	W. Murray ..	Dredge standing; suitable second boat not yet provided	5/2/02.
Golden Elbow, Coal Creek Flat	Golden Elbow Gold-dredging Company	M. Harlewich ..	Dredge and life-saving appliances in good order	4/10/02.

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WORKING DREDGES INSPECTED—*continued.*

Name of Dredge.	Owners.	Dredgemaster.	Remarks.	Dates of Visits.
CLUTHA RIVER—*continued.*				
Coal Creek-Alexandra Gorge (Clutha River).				
Long Valley	Long Valley Gold-dredging Company	W. Woodhouse ..	Stern and well-hole fencing down; well-hole gangway not in position; elevator driving-gear and main fly-wheel to be fenced; heaving-lines required	30/6/02.
			Dredge and life-saving appliances in good order	7/10/02.
Fourteen-mile Beach ..	Fourteen-mile Beach Gold-dredging Co.	G. P. Blue ..	Forward platform too weak; bows and stern to be fenced	1/7/02.
Golden River	Golden River Gold-dredging Company	P. Reader ..	Dredge and life-saving appliances in good order	6/2/02.
		" "	" "	1/7/02.
		J. Taylor ..	Two boat-hooks and 100 ft. of heaving line required; otherwise dredge and life-saving appliances in good order	8/10/02.
Molyneux Falls	Hyde and party	J. McKersey ..	Second boat required; large boat to be equipped with life-saving appliances	6/2/02.
		T. Wilson ..	Dredge standing; visited in connection with accident on 9th September, 1902. Thomas Wilson, dredgemaster, received blow on the head from the handle of the water-brake on current-wheels	8/10/02.
River Molyneux	River Molyneux Gold-dredging Co. ..	T. Sanders ..	Dredge provided with only one boat; main and screen driving-belts to be guarded ..	30/5/02.
New River Molyneux ..	New River Molyneux Gold-dredging Co.	Caretaker ..	Dredge and appliances in fair order; coal-boat not at the dredge; dredge standing ..	10/10/02.
Bendigo	Bendigo Gold-dredging Company ..	T. McMath ..	Light-lines, buoys, and boat-hooks not in position; well-hole fencing down; boats not equipped with life-saving appliances; main fly-wheel not guarded; efficient well-hole gangway not provided	30/5/02.
			Dredge and life-saving appliances in good order	10/10/02.
First Chance	First Chance Gold-dredging Company	S. Hoy	Dredge and life-saving appliances in good order	30/5/02.
New First Chance	New First Chance Gold-dredging Co.	"	" "	10/10/02.
Sailor's Bend	Sailor's Bend Gold-dredging Company	J. Dewar	" "	30/5/02.
		" "	" "	10/10/02.
Manuherikia	Manuherikia Gold-dredging Company	L. Anderson ..	" "	31/5/02.
		" "	" "	9/11/02.
Moa No. 2	Clyde Gold-dredging Company ..	W. Nicholson ..	" "	10/11/02.
Moa No. 1	Clyde Gold-dredging Company ..	"	Well-hole fencing down; life-buoy, boat-hook, and heaving-line not in position on bows; rope-drive and main fly-wheel to be guarded	3/7/02.
			Dredge standing; examined the pontoons internally, and found the red-pine framing and bottom planking much deteriorated. Communicated with the secretary of the company, and had the dredge removed from her position on the river	9/11/02.
Alexandra.				
Alexandra Lead	Alexandra Lead Gold-dredging Company	R. Ross	Dredge and life-saving appliances in good order; well-hole to be fenced	18/2/02.
			Dredge and life-saving appliances in good order; well-hole not yet fenced; to guard fly-wheel and main belts	28/2/02; 3/7/02.
Molyneux Hydraulic ..	Molyneux Hydraulic Gold-dredging Company	C. Simonsen ..	To guard screen driving-gear more effectively; well-hole fencing down; well-hole gangway not in place; fence bows; guard fly-wheel; two buoys missing	8/7/02.
			Dredge and life-saving appliances in good order	11/10/02.
Alexandra Eureka	Alexandra Eureka Gold-dredging Company	N. Bradley ..	Condemned the use of raised platform in the coal-boat; otherwise dredge and life-saving appliances in good order	18/2/02.
			Dredge and life-saving appliances in good order	8/7/02.
Golden Beach	Golden Beach Gold-dredging Company	J. Scott	" "	18/2/02.
		" "	" "	8/7/02.
Ngapara No. 1	Ngapara Gold-dredging Company ..	M. Scott	Elevator driving-gear to be guarded; one boat-hook and 100 ft. of heaving-line required; stern and bows to be fenced; bar required across coal-door	8/7/02.
			Dredge and life-saving appliances in good order	9/7/02.
Ngapara Extended	Ngapara Gold-dredging Company ..	G. McDonald ..	" "	6/12/02.

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WORKING DREDGES INSPECTED—*continued.*

Name of Dredge.	Owners.	Dredgemaster.	Remarks.	Dates of Visits.
CLUTHA RIVER—*continued.*				
Alexandra—continued.				
Enterprise No. 1	Enterprise Gold-dredging Company	T. Sawyer	Elevator-pinions to be guarded; stern and well-hole to be fenced; two boat-hooks required	3/7/02.
Enterprise No. 2	Enterprise Gold-dredging Company	G. MacGregor	Well-hole fencing down; guard screen and elevator driving-gear, also main fly-wheel; second boat condemned as unfit for running on a line	3/7/02.
			Dredge and life-saving appliances in good order	9/7/02.
Earnscleugh No. 1	Earnscleugh Gold-dredging Company	J. Fouhy	"	8/7/02.
			"	13/10/02.
Earnscleugh No. 2	Earnscleugh Gold-dredging Company	"	"	8/7/02.
			Two buoys falling to pieces; otherwise life-saving appliances in good order	13/10/02.
Earnscleugh No. 3	Earnscleugh No. 3 Gold-dredging Company	C. Weaver	New dredge to be worked by electric power; getting ready to start	8/7/02.
			"	13/10/02.
Chicago	Chicago Gold-dredging Company	W. Hansen	Guard screen driving-gear, and fence in the well-hole and sides of pontoons	3/7/02.
		W. Poppelwell	Dredge and life-saving appliances in good order	13/10/02.
Glasgow	Sandy Point Gold-dredging Company	C. Russell	Dredge repairing	8/7/02.
		S. Crow	Dredge standing	13/10/02.
Perseverance No. 1	Perseverance Gold-dredging Company	S. Cameron	Dredge and life-saving appliances in good order	13/2/02.
			"	9/8/02.
			One buoy to be re-covered; elevator-pinions to be guarded; new set of regulations required	13/10/02.
Perseverance No. 2	Perseverance Gold-dredging Company	"	Dredge and life-saving appliances in good order	13/2/02.
			"	13/10/02.
Dunstan Lead	Dunstan Lead Gold-dredging Company	D. Bringans	"	27/2/02.
			Stern fencing and housing carried away on the port pontoon; fencing down on bows and well-hole; one buoy, heaving-lines, and boat-hooks required; fly-wheel to be fenced; well-hole gangway to be provided	7/7/02.
			Fly-wheel guard insecure; stern fencing not erected; well-hole gangway not provided	9/7/02.
Below Clyde.			Dredge and life-saving appliances in good order	14/10/02.
Matau	Matau Gold-dredging Company	H. P. Sanders	Dredge and life-saving appliances in good order	28/2/02.
			"	8/7/02.
Unity	Unity Gold-dredging Company	T. Barry	Guard fly-wheel, air-pump, and screen bevel gear; heaving-lines required	28/2/02.
At Clyde.			Dredge and life-saving appliances in good order	8/7/02.
New Vincent	New Vincent Gold-dredging Company	J. Kane	Guard fly-wheel; fence bows, well-hole, and coal-door; one buoy, 14 in. inside diameter, too small	8/7/02.
			New set of life-belts to be provided; otherwise dredge and life-saving appliances in good order	13/10/02.
Old Dunstan	Old Dunstan Gold-dredging Company	J. Hewitt	Guard fly-wheel and winch-engine pinions; fence stern and well-hole	14/10/02.
			Well-hole fencing insecure; screen driving-gear unprotected	24/10/02.
Clyde–Cromwell Gorge.			Dredge and life-saving appliances in fair order	7/11/02.
Davis Bend	Davis Bend Gold-dredging Company	J. Blair Mason	Dredge and life-saving appliances in good order	9/7/02.
			"	14/10/02.
Leaning Rock	Leaning Rock Gold-dredging Company	D. Murray	Three buoys, 14 in. inside diameter, are too small	10/8/02.
New Leaning Rock	New Leaning Rock Gold-dredging Co.	J. Louden	Dredge and life-saving appliances in fair order	23/10/02.
Monte Christo	Monte Christo Gold-dredging Company	T. Kean	Guard fly-wheel and main pump	10/7/02.
			Dredge and life-saving appliances in good order	23/10/02.
Boundary Creek	Boundary Creek Gold-dredging Company	Caretaker	Dredge standing	14/2/02.
		G. S. Morris	Dredge undergoing alterations	5/4/02.
Half-way House	Half-way House Gold-dredging Co.	D. Murray	Dredge and life-saving appliances in fair order	10/7/02.
New Half-way House	New Half-way House Gold-dredging Co.	Caretaker	"	24/10/02.

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WORKING DREDGES INSPECTED—*continued.*

Name of Dredge.	Owners.	Dredgemaster.	Remarks.	Dates of Visits.
CLUTHA RIVER—*continued.*				
Clyde–Cromwell Gorge—contd.				
Kelly and Casey	Kelly and Casey Gold-dredging Company	H. Brice	Dredge undergoing alterations to improve the freeboard of the pontoons	10/8/02.
			" " "	5/4/02.
			Dredge and life-saving appliances in fair order	10/7/02.
Great Central	Great Central Gold-dredging Company	Caretaker ..	Dredge standing; recommended that the head-lines should be raised from the rocks on which they have been lying a considerable time	24/10/02.
Alpine Consols	Alpine Consols Gold-dredging Company	G. Goodger ..	Well-hole fencing and gangway out of place; coal-boat not equipped; screen driving-gear, main belts, and fly-wheel to be guarded; heaving-lines required	10/7/02.
			Dredge and life-saving appliances in good order	15/10/02.
Riley's Beach	Riley's Beach Gold-dredging Company	T. Hogg	Dredge and life-saving appliances in good order; winch-engine to be guarded	4/4/02.
		J. Watt	Dredge and life-saving appliances in good order	7/11/02.
Alpine No. 2	Alpine No. 2 Gold-dredging Company	A. Johnston ..	Guard screen bevel gear and set-screws on tension-pulley; rail required on sand-chute; fly-wheel and rope-drive to be guarded	10/7/02.
			Dredge and life-saving appliances in good order	7/11/02.
Hartley and Riley	Hartley and Riley Gold-dredging Company	G. McLay ..	Fence stern and guard main belts; otherwise dredge and appliances in good order ..	11/7/02.
			Dredge and life-saving appliances in good order	24/10/02.
Junction-Electric No. 2 ..	Junction-Electric Gold-dredging Company	R. Ross ..	Dredge and life-saving appliances in fair order; examined the pontoons and found them sound, but with an insufficient amount of freeboard	24/10/02.
Above Cromwell.				
Royal Maori	Royal Maori Gold-dredging Company	F. Kitto	Rail required on sand-chute; main belts to be fenced	11/7/02.
New Royal Maori	New Royal Maori Gold-dredging Co.	D. Murray ..	Heaving-lines required; dredge and life-saving appliances in fair order	16/10/02.
Point d'Or	Point d'Or Gold-dredging Company ..	M. Murray ..	Dredge and life-saving appliances in fair order; one life-buoy, 14 in. inside measurement, is too small	15/2/02.
			Fencing on bows, stern, and sand-chute down; heaving-lines too light; boats to be efficiently equipped	11/7/02.
			Dredge and life-saving appliances in good order	16/10/02.
Rise and Shine	Rise and Shine Gold-dredging Company	D. McCormack ..	Elevator driving-gear to be guarded, and approaches made to the elevator; bar required across coal-door; and three life-belts required	15/2/02.
		J. Ray	Door to be made in housing for convenient access behind the fly-wheel	11/7/02.
			Dredge and life-saving appliances in good order	16/10/02.
Luggate.				
Golden Chain	Golden Chain Gold-dredging Company	G. Pettigrew ..	New dredge not yet equipped with life-saving apparatus, nor machinery efficiently guarded	18/10/02.
Below Albertown.				
Upper Clutha	Upper Clutha Gold-dredging Company	Adam Gibson ..	Three life-belts required, also a bar across the coal-door; the well-hole gangway is too light; guard main belts and fly-wheel; coal-boat requires an overhaul	17/2/02.
KAWARAU RIVER.		J. Percy	Light-lines and boat-hooks required; screen driving-gear not guarded	22/10/02.
Above Cromwell.				
Central Electric	Central Electric Gold-dredging Company	J. Saunders ..	Dredge and life-saving appliances in good order	15/2/02.
			" " "	5/4/02.
			Guard screen driving-gear; well hole gangway too weak	11/7/02.
Electric Extended	Electric Extended Gold-dredging Co.	J. Scoles	Dredge and life-saving appliances in good order	5/4/02.
Junction-Electric No. 1. ..	Junction-Electric Gold-dredging Co...	A. Hedley ..	" " "	5/4/02.
Cromwell	Cromwell Gold-dredging Company ..	N. P. Kloogh ..	Dredge-ladders silted up; life-saving appliances in good order	14/7/02.
Lady Ranfurly	Electric Gold-dredging Company ..	A. Steel	Dredge and life-saving appliances in good order	21/2/02.
		J. Troy	Well-hole fencing down; guard screen driving-gear	14/7/02.
			Dredge and life-saving appliances in good order	6/11/02.
Magnetic	Magnetic Gold-dredging Company ..	W. Kitto	" " "	21/2/02.

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WORKING DREDGES INSPECTED—*continued.*

Name of Dredge.	Owners.	Dredgemaster.	Remarks.	Dates of Visits.
KAWARAU RIVER—*continued.*				
Kawarau Gorge.				
Electric No. 2	Electric Gold-dredging Company	A. Hedley	Guard fly-wheel and screen driving-gear; one buoy required	6/11/02.
Voltaic	Voltaic Gold-dredging Company	W. Stevens	Well-hole gangway not in position, and well-hole fencing down; boat-hooks and heaving-lines required; screen-pinions and fly-wheel to be guarded; bar required across coal-door	27/5/02.
			Dredge and life-saving appliances in good order	19/7/02.
Upper Magnetic	Annie Queen Gold-dredging Co.	J. Ritchie	200 ft. of heaving-line and two boat-hooks required	25/2/02.
			Gangway required across the well-hole, and screen driving-gear to be guarded; bows of second boat require caulking	22/7/02.
			Dredge and life-saving appliances in good order	25/10/02.
Gentle Annie	Gentle Annie Gold-dredging Company	D. McLean	New dredge ready to start work	25/2/02.
			Dredge and life-saving appliances in good order	7/4/02.
			Fence screen driving-gear; well-hole and forward fencing down; well-hole gangway not in position; heaving-lines required; two buoys, 14 in. inside measurement, too small	19/7/02.
			Dredge and life-saving appliances in good order	25/7/02.
Meg and Annie	Meg and Annie Gold-dredging Company	E. McDonnell	"	25/2/02.
			Guard screen driving-gear; fence main belts and rope-drive; well-hole gangway not in position; heaving-lines and one boat-hook required; one buoy, 14 in. inside measurement, too small	22/7/02.
			Dredge and life-saving appliances in good order	25/10/02.
Grand Junction	Grand Junction Gold-dredging Company	A. Young	Guard fly-wheel and main belt; provide stern fencing and approach to elevator	25/10/02.
			Dredge and life-saving appliances in good order	28/10/02.
Gibbston.				
Merrimac	Merrimac Gold-dredging Company	Caretaker	Dredge standing	22/2/02.
Golden Molyneux	Golden Molyneux Gold-dredging Co.	T. Spain	Dredge being dismantled	29/10/02.
Galvanic	Galvanic Gold-dredging Company	J. Richmond	This dredge, which was recently sunk, is unprovided with boats and life-saving appliances	22/2/02.
			Guard screen driving-gear and winch-engine; three buoys, 14 in. inside measurement, too small	22/7/02.
Gibbston	Gibbston Gold-dredging Company	A. Steel	Regulations not posted; dredge stopped for alteration; the second boat, which had been a ship's boat, is unsuitable for river-work, and has been condemned	29/10/02.
Eclipse	Eclipse Gold-dredging Company	R. Woods	Dredge and life-saving appliances in good order; the cork jackets in use are rather heavy for convenience in working	22/2/02.
Above Kawarau Bridge.		W. Jones	Dredge and life-saving appliances in good order	22/7/02.
Kawarau Bridge	Kawarau Bridge Gold-dredging Company	Caretaker	Dredge moored in safe position	24/2/02.
		"	"	22/7/02.
Arrow Junction	Arrow Junction Gold-dredging Co.	S. Hoy	Gangway required across well-hole; two more life-belts required	24/2/02.
	Reid and party	P. Reid	Guard main fly-wheel, and use the well-hole gangway	21/7/02.
Kia Ora	Kia Ora Gold-dredging Company	G. S. Morris	Reg. 83, Rule 1, disregarded; elevator driving-gear to be guarded; port bow-line fair lead to be shifted; the second boat, 12 ft. in length by 5 ft. beam by 2 ft. 6 in. in depth, has been condemned as unfit for river-work	24/2/02.
Kia Ora	Golden Vein Gold-dredging Company	A. Bremner	Dredge standing; dredge and life-saving appliances in good order and repair	24/5/02.
SHOTOVER RIVER.				
Prince Arthur	Prince Arthur Gold-dredging Company	J. Kitto	New dredge getting ready for work	19/5/02.
		"	"	16/6/02.
			Well-hole fencing not erected; main belts and fly-wheel to be guarded; the second boat is too light and narrow for river-work, and has been condemned	21/7/02.
			Dredge and life-saving appliances in good order; suitable second boat not yet provided	27/10/02.
Maori Point	Maori Point Gold-dredging Company	J. Hoskins	Dredge and life-saving appliances in good order; the large boat was lying on the beach	17/5/02
			Large boat now at the dredge	21/5/02.

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WORKING DREDGES INSPECTED—*continued*

Name of Dredge.	Owners.	Dredgemaster.	Remarks.	Dates of Visits.
CARDRONA VALLEY.				
Lone Star, below Branch Creek	Lone Star Gold-dredging Company ..	C. Melton ..	Heaving-lines required; well-hole fencing down; forward and well-hole gangways not in position; main belts not fenced; boat not in paddock	14/7/02.
			Dredge and life-saving appliances in fair order..	20/10/02.
La Franchi's	La Franchi's Gold-dredging Company	A. La Franchi ..	Boat-hooks and heaving-lines required; guard screen, driving-gear, and all set-screws; forward and well-hole gangways required	14/7/02.
NEVIS RIVER.				
Nevis. ..			Dredge and life-saving appliances in fair order; heaving-lines required	20/10/02.
Crewe	Crewe Gold-dredging Company ..	J. A. Cheshire ..	Fencing required on stern and bows; main belts and screen driving-gear not guarded; regulations not posted	31/10/02.
Carrick	Carrick Gold-dredging Company ..	..	Contractors removing dredge to Upper Nevis	31/10/02.
New Nevis	New Nevis Gold-dredging Company	J. Thompson ..	Guard winch bevel gear and main and elevator driving-belts; boat-hooks and heaving-lines required; new copy of regulations to be posted up	31/10/02.
Ngapara No. 2	Ngapara Gold-dredging Company ..	A. McLean ..	Heaving-lines and boat-hooks required; otherwise life-saving appliances in good order ..	31/10/02.
Ngapara No. 3	Ngapara Gold-dredging Company ..	..	Fence bows; guard rope-drive and pump-belt; bar required across the coal-door	31/10/02.
Nevis Crossing	Nevis Crossing Gold-dredging Company	..	Contractors removing Remarkables dredge to the Nevis Crossing	31/10/02.
BANNOCKBURN.				
Shepherd's Creek	Shepherd's Creek Gold-dredging Company	Position vacant ..	Dredge standing for some considerable time	14/7/02.
MANUHERIKIA RIVER.				
Golden Link, Alexandra ..	Golden Link Gold-dredging Company	W. Poulter ..	Well-hole fencing to be erected; heaving-lines and boat-hooks required; this dredge requires to be provided with a second boat	8/2/02.
Morning Star, above Alexandra	Morning Star Gold-dredging Company	W. Mason ..	Forward gangway not in position; two buoys, 150 ft. of heaving-line, and two boat-hooks required	11/2/02.
		J. Timmings ..	Boat-hooks and heaving-lines required; new copy of regulations to be posted up	11/10/02.
			Dredge and life-saving appliances in good order	8/11/02.
Olrig, Springvale	Olrig Gold-dredging Company ..	E. A. Johnston ..	Elevator driving-gear to be guarded; forward railing to be erected	11/2/02.
			Boat not in paddock; otherwise dredge and life-saving appliances in good order	19/2/02.
IDA VALLEY.				
Cairntrodlie Poolburn ..	Cairntrodlie Gold-dredging Company	H. Mercer ..	Heaving-lines required; boat not in paddock	5/12/02.
NASEBY.				
Roberts's Naumai, Upper Kyeburn	E. Roberts	C. McQueen ..	Dredge and life-saving appliances in fair order	12/12/02.
TUAPEKA.				
Evans Flat, Evans Flat ..	Evans Flat Gold-dredging Company	T. Gillespie ..	Light-lines and boat-hooks required; main belts and fly-wheel to be guarded; regulations not posted	19/6/02.
Lawrence, Tuapeka Flat ..	Lawrence Gold-dredging Company ..	S. McStay ..	Boat not equipped; life-buoys to be re-covered; boat-hooks and light-lines to be provided ..	19/6/02.
Reliance, Tuapeka Flat ..	Reliance Gold-dredging Company ..	J. Hughes ..	Two boat-hooks and 150 ft. of heaving-line required; forward gangway not in position; bevel gear and fly-wheel to be guarded	19/6/02.
Tuapeka, Tuapeka	Tuapeka Gold-dredging Company ..	R. Montgomery ..	One boat-hook missing; boat not equipped; stern railing down..	19/6/02.
Gabriel, Tuapeka Flat ..	Gabriel Gold-dredging Company ..	J. P. Uren ..	One boat-hook required; boat not equipped	19/6/02.
Happy Valley, Wetherstone's	Happy Valley Gold-dredging Company	A. N. Wakefield ..	Guard fly-wheel, set-screws on winch-shaft, also main and pump driving-belts; well-hole and forward gangways not in use	21/8/02.
Golden Rise, Wetherstone's ..	Adams, Smythe, and party	J. Buchanan ..	Dredge and life-saving appliances in fair order..	21/8/02.

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WORKING DREDGES INSPECTED—*continued.*

Name of Dredge.	Owners.	Dredgemaster.	Remarks.	Dates of Visits.
TUAPEKA—*continued.*				
Imperial, Waitahuna	Imperial Gold-dredging Company	W. Noble	Outside guard required on the top gearing; heaving-lines and boat-hooks required; new copy of regulations required; fly-wheel to be guarded	22/8/02.
Havelock, Waitahuna	Havelock Gold-dredging Company	W. Rowe	Boat-hooks and heaving-lines required; set-screws on winch-shaft to be guarded; new set of regulations required	22/8/02.
Gordon, Waitahuna	Gordon Gold-dredging Company	H. Crozier	Well-hole gangway required; outside guard required on the top gear; boat to be equipped with life-saving apparatus	22/8/02.
Manuka, Waitahuna	A. C. Broad	J. Baker	Forward and well-hole gangways not in use; boat-hooks and heaving-lines required; regulations not posted	22/8/02.
Waitahuna Gully, Waitahuna	Waitahuna Gold-dredging Company	J. Donaldson	Fly-wheel and main belts to be fenced; set-screws on winch-shaft to be guarded; boat-hooks required; boat not equipped with life-saving apparatus; regulations not posted	22/8/02.
GLENORE.				
Gold Bank, Glenore	Gold Bank Gold-dredging Company	W. Thomas	Dredge standing; new pontoons to be built	22/8/02.
Stirling, Glenore	Stirling Gold-dredging Company	J. Nelson	Dredge and life-saving appliances in good order	22/8/02.
WAIPORI.				
New Jutland Flat, Waipori	New Jutland Flat Gold-dredging Company	Not appointed	This dredge is being fitted with O'Brien's system of hydraulic power	19/4/02.
		T. Jefferson	Guard required on top gear; set-screws to be guarded; well-hole gangway required	18/8/02.
			Dredge and life-saving appliances in good order	27/11/02.
O'Brien's Patent, Waipori	Quilter and party	W. Quilter	Re-erecting the dredge at Waipori Township	6/3/02.
		W. Carr	Visited in connection with the accident on the 13th August, 1902. W. Quilter, winchman, while oiling machinery in motion, had his arm torn off	16/8/02.
			Dredge and life-saving appliances in fair order	27/11/02.
Upper Waipori, Waipori	Upper Waipori Gold-dredging Company	C. Haggitt	" "	18/4/02.
			" "	27/11/02.
Waipori Consolidated, Waipori	Waipori Consolidated Gold-dredging Company	T. Jefferson	Forward gangway to be repaired	6/3/02.
			Two buoys to be re-covered	18/4/02.
Success, Waipori	Success Gold-dredging Company	W. Hanley	Dredge visited in connection with drowning fatality on 30th January, 1902. J. J. McClusky was drowned through swamping of the boat while under-running a line	31/1/02.
			Dredge and life-saving appliances in good order	18/4/02.
Perseverance (McNeil's), Waipori	Perseverance Gold-dredging Company	D. Aitken	" "	18/4/02.
Empire No. 1, Waipori	Empire Gold-dredging Company	G. Larkins	One buoy to be re-covered; 150 ft. of heaving-lines and two boat-hooks required; sleeve to be put on main engine-shaft	18/4/02.
Golden Shore, Waipori	Golden Shore Gold-dredging Company	R. Allen	Dredge and life-saving appliances in good order	18/4/02.
			" "	28/11/02.
Empire No. 2, Waipori	Empire Gold-dredging Company	G. Larkins	One boat-hook missing; sleeve required on main engine-shaft; forward gangway out of repair	17/4/02
			Dredge and life-saving appliances in good order	28/11/02.
Lower Enfield, Waipori	Lower Enfield Gold-dredging Company	C. Potts	This dredge is being fitted with O'Brien's system of hydraulic power	17/4/02.
			New dredge not yet equipped with life-saving appliances, nor machinery efficiently guarded	17/8/02.
			Fence the bows and guard winch bevel gear; forward gangway required	28/11/02.
Enfield, Waipori	Enfield Gold-dredging Company	C. Adamson	Screen driving-gear and winch-pinions to be guarded; bows to be fenced in	17/4/02.
Big Flat, Verterburn	Big Flat Gold-dredging Company	Caretaker	Dredge standing	17/4/02.
Broad Creek, Welch's Flat	Broad Creek Gold-dredging Company	D. Mitchell	New dredge not yet equipped with life-saving appliances, nor machinery efficiently guarded	17/4/02.

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WORKING DREDGES INSPECTED—*continued.*

Name of Dredge.	Owners.	Dredgemaster.	Remarks.	Dates of Visits.
SHAG RIVER.				
Incholme, Inch Valley ..	Incholme Gold-dredging Company ..	..	Dredge standing	
Inchdale, Inch Valley ..	Inchdale Gold-dredging Company ..	P. Brennan ..	Screen driving-gear and main fly-wheel to be guarded; well-hole gangway not in use; heaving-lines and boat-hooks required; main pump to be guarded	12/8/02.
Inch Valley, Inch Valley ..	Inch Valley Gold-dredging Company..	J. Black	Well-hole gangway to be provided; boot-hooks required	12/8/02.
Dunback, Dunback	Dunback Gold-dredging Company ..	..	Dredge standing	12/8/02.
POMAHAKA RIVER.				
Greenvale, Scrubby Flat ..	Greenvale Gold-dredging Company ..	Caretaker ..	Life-saving appliances not provided; dredge standing	7/5/02.
Ardmore, Kelso	Private syndicate	G. Reid	Forward gangway required; fly-wheel and shaft of main engine to be guarded; boat not in the paddock	7/5/02.
MATAURA RIVER.				
Mataura Consolidated, Mataura Island	Private syndicate	P. Busbridge ..	Dredge and life-saving appliances in good order	22/4/02.
Central Mataura No. 2 ..	Central Mataura Gold-dredging Company	W. Shore.. ..	" "	1/9/02.
EDENDALE.				
Two Creeks, Edendale ..	Two Creeks Gold-dredging Company	F. W. Jones ..	Life-saving appliances not provided; the coal-punt has too little freeboard	21/1/02.
			Two buoys, three boat-hooks, and 150 ft. of heaving-line required	22/4/02.
WAIKAKA RIVER.				
Sheddon's Freehold, Waikaka Valley	Sheddon's Freehold Gold-dredging Company	W. Patterson ..	Forward gangway required; otherwise dredge and appliances in good order	29/4/02.
Waikaka Syndicate, Waikaka Valley	Waikaka Gold-dredging Syndicate ..	Not appointed ..	Pontoons launched	27/8/02.
Lilliesleaf, Waikaka Valley ..	Lilliesleaf Gold-dredging Co. (private)	R. F. White ..	Dredge repairing; life-saving appliances in good order	29/4/02.
Waikaka, Waikaka Valley ..	Waikaka Gold-dredging Company ..	J. Watt	Main and pump belting to be guarded	29/4/02.
Gleniti, Waikaka	Gleniti Gold-dredging Company ..	Position vacant ..	Dredge standing	29/4/02.
Patterson's Freehold, Waikaka	Patterson's Freehold Gold-dredging Company	J. Patterson ..	Light-lines required; otherwise dredge and life-saving appliances in good order ..	4/3/02.
			Dredge and life-saving appliances in good order	28/8/02.
Record, Waikaka	Record Gold-dredging Syndicate ..	H. May	Forward gangway required	29/4/02.
Celtic, Waikaka	Celtic Gold-dredging Company ..	P. Brandt ..	"	29/4/02.
Perry's Pioneer, Waikaka ..	J. R. Perry	H. Parsons ..	Dredge and life-saving appliances in fair order	4/3/02.
			" " "	28/8/02.
LITTLE WAIKAKA RIVER.				
Little Waikaka, Waikaka ..	Little Waikaka Gold-dredging Company (private)	J. Brownlie ..	" "	30/4/02.
Ibbotson's, Waikaka	Ibbotson and party	T. Maslin ..	" "	30/4/02.
Globe, Waikaka	Globe Gold-dredging Company ..	G. Lee	Dredge and life-saving apliances in fair order	4/3/02.
			" "	28/8/02.
Waikaka United No. 1, Waikaka	Waikaka United Gold-dredging Co. ..	W. Wilson.. ..	Forward gangway required	30/4/02.
Waikaka United No. 2, Waikaka	Waikaka United Gold-dredging Co. ..	T. A. Graham ..	New dredge starting work; regulations not posted; forward gangway required	28/8/02.
Waikaka Queen, Waikaka ..	Waikaka Queen Gold-dredging Company	J. Wallace ..	Forward gangway not in position; 150 ft. of heaving-line required; well-hole fencing down and side rails on the boxes shaken	30/4/02.
Waikaka Forks, Waikaka ..	Irvine and party (private)	J. Henderson ..	Three boat-hooks and 150 ft. of heaving-line required; forward gangway too weak; fly-wheel to be guarded	30/4/02.
Lee's Steel Dredge, Waikaka ..	Robert Lee	W. Wilson ..	Re-erecting Lower Shotover dredge	1/5/02.
			Regulations not posted; one buoy and three boat-hooks required; well-hole, gangway, and fencing required	28/8/02.
CHATTON.			Dredge and equipment in good order	25/10/02.
Ibbotson's, Chatton Reserve ..	Ibbotson and party (private) ..	T. J. Ibbotson ..	Re-erecting the Premier No. 1 dredge from Maerewhenua	2/5/02.
			Regulations not posted; new dredge not yet fully equipped with life-saving apparatus ..	29/8/02.
Gold Creek, Chatton ..	Gold Creek Dredging Company (private)	W. Robins ..	Forward gangway required; also 150 ft. of heaving-line and two boat-hooks	1/5/02.

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WORKING DREDGES INSPECTED—*continued*.

Name of Dredge.	Owners.	Dredgemaster.	Remarks.	Dates of Visits.
WAIMUMU STREAM, WAIMUMU.				
Victoria, Waimumu	Victoria Waimumu Gold-dredging Company	H. Quertier	Dredge ready to start work	22/1/02.
			Dredge being dismantled for removal to Waikaka	26/8/02.
Treasure, Waimumu	Private	F. Browne	Dredge standing	22/1/02.
		W. F. Thompson	This dredge has not yet been efficiently provided with life-saving appliances, nor the machinery properly guarded	26/8/03.
Waimumu Queen	Waimumu Queen Gold-dredging Company	Ed. Reid	Forward gangway required; dredge repairing	22/1/02.
		J. Murray	Dredge undergoing extensive overhaul	26/8/02.
Waimumu Extended	Waimumu Extended Gold-dredging Company	G. Pettigrew	Dredge and life-saving appliances in good order	22/1/02.
		H. Leicester	Well-hole gangway to be provided; pulley on main engine to be guarded	26/8/02.
Waimumu	Waimumu Gold-dredging Company	J. F. T. Berendsen	One buoy missing; dredge repairing	22/1/02.
			Dredge and life-saving appliances in fair order; recommended a passage-way to be made under the tables	26/8/02.
Royal Waimumu	Royal Waimumu Gold-dredging Company	W. Wilson	New dredge not provided with life-saving appliances, nor machinery efficiently guarded	22/1/02.
			Rules not posted; forward gangway not in position; guard set-screw and coupling on winch driving-shaft	26/8/02.
Waimumu Central	Waimumu Central Gold-dredging Company	D. Caithness	Well-hole and forward gangways not provided; 150 ft. of heaving-line required	22/1/02.
			Well-hole gangway required; otherwise dredge and life-saving appliances in good order	26/8/02.
Burrell's Freehold	Burrel's Freehold Gold-dredging Company	G. Bennett	Dredge and life-saving appliances in good order	22/1/02.
			" "	26/8/02.
McLean's Freehold	McLean's Freehold Gold-dredging Company	D. McKenzie	Re-erecting Milestone dredge	22/1/02.
			Well-hole gangway required; hatch to be cut for easy access behind the pump; bevel gear to be guarded; boat not yet provided	26/8/02.
CHARLTON CREEK, CHARLTON.				
MacCharlton	MacCharlton Gold-dredging Company	P. Brandt	New dredge not yet equipped with life-saving appliances	27/8/02.
			Fly-wheel of main engine and pump-belt to be fenced; forward gangway not in position	1/9/02.
Charlton Creek	Charlton Creek Gold-dredging Company	C. Bennett	Dredge and life-saving appliances in good order	23/1/02.
			" "	27/8/02.
Central Charlton	Central Charlton Gold-dredging Company	J. McCorkindale	" "	23/1/02.
			Boat not in paddock; one buoy not on bows; boat-hook and light-line required aft	27/8/02.
Charlton Valley	Charlton Valley Gold-dredging Company	W. G. Mouat	Dredge and appliances in fair order	23/1/02.
		W. McCorkindale	Well-hole gangway not in position; bar required across coal-door; fly-wheel to be guarded; one boat-book and 50 ft. of heaving-line required	27/8/02.
Lady Charlton	Lady Charlton Gold-dredging Company	J. Murray	Dredge and life-saving appliances in good order	24/1/02.
		W. Gibb	Dredge standing	27/8/02.
WAIKAIA RIVER.				
Mystery Flat, Waikaia	Mystery Flat Gold-dredging Company	E. Lawson	Forward gangway required	10/5/02.
Nugget, Upper Waikaia	Private syndicate	J. Taylor	Dredge and life-saving appliances in fair order	11/5/02.
Muddy Creek (Limited), Muddy Creek	Muddy Creek Gold-dredging Company (Limited).	F. Browne	" "	12/5/02.
WAIAU RIVER.				
Belmont, Clifton	F. Jack	D. O'Leary	Second boat not at the dredge; railing torn off bows	24/4/02.
			Visited dredge in connection with the fatal accident on 28th July, 1902. While boating wood Charles Prince was drowned through boat swamping	30/7/02.

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SUMMARY OF DREDGES IN SOUTHERN MINING DISTRICT.

	At 31st December, 1902.
Working—	
In Otago	122
In Southland	29
	151
Building—	
In Otago	2
In Southland	6
	8
Standing—	
In Otago	27
In Southland	9
	36
Removing—	
In Otago	12
In Southland	2
	14
Wrecked—	
In Otago	2
	2
Total for Otago and Southland	211
Increase of working dredges—	
Otago	7
Decrease of working dredges—	
Southland	3

At the end of December, 1901, the total number of dredges in Otago and Southland was 228. At the end of December, 1902, this number dropped to 211. During the year there was an increase of seven working dredges in Otago, and a decrease of three in Southland. Eighteen new dredges were completed and started work, while two were in the building stage at the end of the year. A large number of companies liquidated during the year. Some of these companies were reconstructed, and the dredges resumed work on the original claims; while other dredges were sold for removal, in most cases to registered companies having no machines.

The Junction-Electric Company sustained a heavy loss through the sinking of their No. 1 dredge. The buckets had got off the bottom tumbler, and had torn a hole in a plank in the flooring of one of the pontoons.

Another serious event was the total destruction by fire of the Bendigo Gold-dredging Company's dredge.

Perforated revolving screens are principally used on dredges working clean river-gravel claims, the finer material being assorted by the screen, and distributed over tables of various types, usually having liberal spread, expanded metal with cocoanut-matting being principally used for gold-saving. The stones and coarse wash are discharged from the screens overboard, while in deep ground an elevator is provided. Should an undue proportion of fine silt in the wash prove troublesome, by reason of its filling up the paddock, an accessory silt-elevator is used, by means of which the silt is conducted to the elevator-trays and deposited on the tailings-heap. On land claims having surface deposits of clay and swamp mud overlying auriferous gravels screens have been found unsuitable, and material is discharged from the buckets into sluice-boxes, cocoanut-matting under angle-iron ripples being used for gold-saving.

Payne and Peck's centrifugal elevator having been tried and found suitable, several dredges are now being furnished with this appliance.

Five dredges are working with O'Brien's application of hydraulic power, which is found to be more economical than steam-power in districts where water is available, and especially where coal is dear. Four heads of water, under pressure of from 40 ft. vertical head and upwards, are required to provide necessary power.

The matter of freeboard has been receiving constant attention throughout the year, especially in connection with several gorge dredges.

After starting work it was found that as originally designed the ladders of a considerable number of dredges working in river gorges were not sufficiently long to enable the bottom to be reached during the somewhat lengthy periods when the rivers were high, and in a number of cases ladders have been extended by from 5 ft. to 10 ft. This having had the effect of altering the trim of the pontoons, additional or false bows became necessary on the pontoons to provide sufficient freeboard. Owing to several dredges having sunk from various causes, watertight bulkheads are being introduced, by means of which it is hoped risks may be minimised.

For the better preservation of timber in the pontoons, ventilators are fitted into the decks of many dredges. This is important where such parts of the machinery as the superheater, condenser, or steam-pipes are placed beneath the deck.

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Clarendon Rock-phosphate Deposits: Stacks of Rock-phosphate at the Burning Ground.

Face p. 138.] Clarendon Rock-phosphate Deposits: Stack of Rock-phosphate ready for burning.

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At Alexandra, pending the construction of a suitable road, coal is being boated down river for the supply of four dredges in the gorge, distances ranging from two to four miles. This is not only costly, but a perilous undertaking, and several boat-accidents have been narrowly averted.

Dredging operations in the Cromwell Gorge were seriously hampered by the effects of two heavy thunderstorms which occurred early in the year, whereby enormous quantities of material were carried into the river, causing its bed to be raised several feet in many places. It has recently been noticed that the bars thus formed on the river are gradually but slowly wearing down toward former levels.

OTHER MINERALS.

Cinnabar.

Waitahuna Cinnabar Company, Waitahuna Heights.—(18/4/1902): At the end of July, 1901, a cross-drive had been driven 231 ft. to cut the lode, and a further contract for a drive of 300 ft. along the lode was let to Gibb and Roberts. On the date of my visit a total length of 200 ft. had been completed, and latterly the character of the lode material had improved, although no cinnabar had yet been struck. The foot-wall is well defined, and carries a band of pug, while the lode material is becoming softer. Should ore be struck soon there will be fully 125 ft. of backs to rise on. Expectations are, however, centred on the junctions of two small lodes with the main lode, one of these being 95 ft. ahead of the present face, and the other 155 ft. ahead. From the latter junction 200 ft. of backs will be available. The drives are 6 ft. high by 4 ft. 6 in. wide, and are well timbered where necessary, the main crosscut being through good standing country-rock. Present operations are purely prospective, but the company's engineer, Mr. L. O. Beal, jun., thinks that present appearances on the surface and in the drive justify further efforts and the necessary expenditure on the part of the company. Proceedings at the mine are often hampered by bad weather and the difficulty of access to the mine. A new surface lode has lately been discovered. It has a well-defined foot-wall running behind and parallel to the foot-wall of the main lode. Later information from the engineer is to the effect that a new contract had been entered into in December, 1902, with Messrs. Roberts Bros. A crosscut was driven from the main lode on to the back lode. This was found to be coming in to junction with the main lode, and as the cost of driving was cheaper on the main lode this is being pushed ahead for 90 ft. further. The lode is running north-west and south-east, and more cinnabar is appearing in the stone as the drive is continued to the north-west. The main drive is timbered, and side laths put in.

Scheelite.

Of this mineral 41 tons is returned as having been produced during the year, principally from the Macrae's district.

Inquiries are being made in reference to the scheelite-mine at Glenorchy, and present indications are that the mine may soon be in work again.

Antimony.

The lode at Alexandra had been opened up and trial shipments sent to Melbourne, but it is understood that the cost of production and heavy freights in conveying the mineral to a seaport town had absorbed the profits, and the claim is now abandoned.

Iron Lode.

Attention having been drawn to an alleged discovery at Moke Creek, a visit was paid to the locality, but unfortunately the deposit was then covered with snow, and the person who made the discovery regretted that he was unable to produce a specimen of the lode formation.

Galena.

The Tarawera lode at Preservation Inlet had been tested in a small way, but work is now discontinued.

Copper.

Nothing doing on the Moke Creek or Waitahuna lodes.

Several applications have been made for licenses to prospect for copper on the Malvern Hills, Canterbury.

Phosphate Rock.

A discovery of importance had been made on the Horse-shoe Bush Estate, Clarendon, Otago, where from 50 to 80 per cent. phosphate (boulder formation) is found in quantity immediately overlying the Milburn limestone-deposit. Some 2,000 tons had been produced to the end of the year.

ACCIDENTS AND FATALITIES.

Quartz-mines.

Non-fatal.

22/9/1902.—Samuel Stevens, working alone in a quartz-prospecting drive at Matarae, was pinned to the floor by a slab of stone weighing about 5 cwt., which fell from the side at the face. Stevens sustained a large scalp-wound on the right side of his head.

22/10/1902.—Oswald Mosley, miner, was winding up a bucket of dirt, a total distance of 7 ft. from the sump, with a hand-windlass, when his hand slipped, and the handle suddenly reversing struck Mosley on the face, the left eye being subsequently removed.

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HYDRAULIC AND ALLUVIAL MINES.

Fatal.

4/4/1902.—John Murray, miner, Main Gully, Naseby, while working in his claim, was fatally injured by a fall of clay from the face.

18/4/1902.—A Chinese named Wong Choy was killed by a fall from the face in his claim at Bald Hill Flat.

5/6/1902.—Michael Mungovan, Black's No. 3, fell from the bucket in prospecting-shaft, a distance of 100 ft., death being instantaneous.

Non-fatal.

23/9/1902.—While cleaning up the boxes at the Lion Gold-mining Company, at Nokomai, they collapsed. D. McKenzie, manager, sustained fracture of small bone in leg, and two other men received slight bruises.

GOLD-DREDGES.

Fatal.

30/1/1902.—James Joseph McCluskey, casual hand, Success dredge, Waipori: Drowned through boat swamping while under-running a line.

2/5/1902.—James Cummings, winchman, Excelsior dredge, Miller's Flat: Killed. While working the winches an intermediate winch-pinion broke, a flying piece of metal striking him on the head.

20/6/1902.—William F. Bishop, engineer, Champion dredge, Beaumont, was fatally injured while oiling machinery in motion. The sleeve of his jumper was caught by the set-screw on screen-driving shaft, the right arm being torn off at the shoulder and right breast lacerated.

28/7/1902.—Charles Prince, dredge-hand, Belmont dredge, Waiau: Drowned, having jumped out of the boat, which was partially swamped owing to the boat-line fouling on a hidden snag.

30/10/1902.—Peter Müller, winchman, Golden Glen dredge, Island Block: Fatally injured, being caught in a coil of the ladder-line and crushed against the gantry.

In each case the dredge has been visited and inquest attended, and I subsequently reported to you on the several fatalities. In every instance the Coroner's jury brought in a verdict of "Accidental death."

Non-fatal.

4/3/1902.—Perseverance No. 1 dredge, Alexandra: Mrs. McElroy (a visitor) fractured ankle; dress caught by revolving shaft.

13/3/1902.—Charles Booth, fireman, Long Valley dredge, Coal Creek Flat: Two fingers cut off in a bight on the head-line.

4/4/1902.—N. P. Kloogh, dredgemaster, Cromwell dredge, Cromwell: Blow on forehead by handle of crab-winch reversing suddenly.

12/4/1902.—J. Reeves, boxman, Waipori Consolidated dredge, Waipori, slipped when stepping across the well-hole and fell on a corner of the deck, fracturing three ribs.

22/4/1902.—F. Green, winchman, United No. 1 dredge, Waikaka: Toes crushed between winch-barrel and frame.

8/7/1902.—Harold Williams, winchman, Island Block dredge, Island Block: Foot slightly crushed between two winch-pinions.

14/7/1902.—G. P. Blue, dredgemaster, Fourteen-mile Beach, Electric dredge, Bald Hill Flat: Fingers and thumb of left hand burnt by contact with uninsulated cable.

13/8/1902.—T. F. Quilter, winchman, Quilter and party's hydraulic dredge, Waipori: Right arm crushed while oiling spur-wheel bearing, machinery being in motion. The arm was subsequently amputated above the elbow.

25/7/1902.—Thomas Gourley, engineer, Gold King dredge, Roxburgh: Fractured leg by lever lashed to fly-wheel for reversing engines.

8/9/1902.—Thomas Wilson, dredgemaster, Molyneux Falls dredge, Bald Hill Flat: Severe blow on crown of head, struck by handle of water-brake, which reversed suddenly.

I duly forwarded reports of the several accidents to you subsequent to respective dates hereof.

I have, &c.,
E. R. GREEN,
Inspector of Mines.

The Under-Secretary, Mines Department, Wellington.

REPORTS OF WARDENS.

Mr. Warden HUTCHISON to the UNDER-SECRETARY for MINES, Wellington.

SIR,— Warden's Office, Auckland, 18th February, 1903.

I forward herewith the annual returns for the Puhipuhi Gold-mining District. As there has been no business transacted during the past twelve months I have nothing to report.

I have, &c.,
T. HUTCHISON,
Warden.

The Under-Secretary, Mines Department, Wellington.

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Clarendon Rock-phosphate Deposits: Rock-phosphate being burnt.

The Arthur's Point Hydraulic Gold-mining Claim on the celebrated Big Beach, Shotover River, Otago.

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Mr. Warden Bush to the Under-Secretary for Mines, Wellington.

Sir,— Warden's Office, Thames, 18th May, 1903.

I have the honour to forward the annual report on mining matters for the year ending the 31st December, 1902, within the Hauraki Mining District. The areas held under license on record at the different offices throughout the district approximately are as follows: Thames, 7,213 acres; Paeroa, 3,211 acres; Waihi, 4,233 acres; and Coromandel, 4,350 acres: making a total of 18,988 acres. In the Waihi Borough there are 1,141 men; in the County of Ohinemuri, 672 men; in the Thames County and Borough, 478 men; in the Coromandel County, 314 men; and on the Barrier Island, three men, employed.

Although one hears so much about the dullness in mining, yet it is satisfactory to report a steady increase in the output of gold, which for the whole field amounts to £701,256 16s. 11d.

The increase for the first quarter of 1903 as compared with the first quarter of 1902 is £32,561. Should the present output continue there should be a very substantial increase in the gold-production for the current year.

The most consistent of gold-producing mines for the past year have been the Waihi and New Zealand Crown Mines. The monthly returns of the former mine have now exceeded £53,000, and those of the latter, with a fifth of the battery-power of the former, range between £6,000 and £7,000 per month.

The Komata and Talisman Mines are again crushing, and making fair returns.

The Waitekauri Company's mine, however, has not added much to the gold-product during the past year, nor has the Woodstock Mine, though the latter has made a few returns.

The Tairua Broken Hills has been a regular producer of gold for the last year. The monthly returns have been good and fairly uniform, the ore value being slightly over £3 per ton. The total yield from this mine to date is £31,478.

The Thames-Hauraki, May Queen, and Moanataiari Companys' properties have all changed hands recently. The freehold portion of the former company's property is advertised for sale by the Sheriff under writ from Supreme Court. The prospectus has been issued with the object of forming the May Queen and Moanataiari properties into one company, but so far no news of a successful flotation has been received.

The Mahara Royal Company's property at Tapu was sold recently, and purchased by an Auckland syndicate, who are at present working the same.

The Golden Belt, at Neavesville, is another property which has recently changed hands, the purchasers being the owners of the Tairua Broken Hills Mine, and it is anticipated that this mine under the new management will turn out a gold-producer.

There are many parties of tributers working in some of the Thames, Coromandel, and Kuaotunu mines, who have secured more or less gold.

The Bunker's Hill Mine, at Coromandel, has yielded some six or seven thousand pounds' worth of gold during the last four or five months.

A West Australian statistican places New Zealand as the fourth greatest gold-producing colony in Australasia during the past decade.

There has been considerable discussion locally of late as to devising some scheme for testing the lower levels of the Thames portion of the field. The general opinion is that a process of boring operations should be undertaken on different portions of the field, but so far no such operations have been commenced.

Some of the up-country mines have tried boring, notably the Woodstock, at Karangahake. It is rumoured that both the Waitekauri and Grand Junction Companies propose to make boring tests on their properties.

The time appears to have arrived for an alteration in the method of assessing the mines for drainage purposes. The present system of asking mine-owners how deep they desire to work before making the assessment is oppressive on the mine-owners who wish to avail themselves of the drainage facilities by working as deep as the pumps will enable them to, as they are saddled with the burden of contributing largely to the assessment, while those who intimate a desire to only work near the surface escape with light assessment, although the same pumping drains their mines to the same depth as that of the mine-owners who are carrying on vigorous works at a depth of 500 ft. or more. The present system is providing a species of continuous protection to those mine-owners who do little or no work on their properties, or who may be waiting for those bearing the burden and working as deep as the pumps permit to make some discovery to enhance the values of their mines. The present method seems to assist the non-working owners, whereas it should help those who are endeavouring to get down as deep as they can so as to test what is hidden there. At present the drainage system does not appear to be of very great assistance in enabling the deeper levels to be reached. The arrangements are on too small a scale for our present requirements. Some method is necessary which would cause all mine-owners to prosecute their operations systematically with one object in view—viz., to reach a depth of 1,000 ft. or more. In this way if one mine only was fortunate in unearthing something others would have reason to persevere with their sinking, but when perhaps one mine only is sinking, while the others are virtually looking on, the chances of success are very much reduced, which has a tendency to engender a feeling of despondency. The work is a large one, and success can only be attained by every mine-owner pushing on his workings to 1,000 ft. or more. The problem is a serious one to the Thames portion of the district, and is one to which a solution will have to be found at no distant date, some solution other than that the cost of pumping should be borne by the State.

The Hon. the Minister of Mines has taken steps to utilise the surface area of the goldfields by providing for pastoral leases ranging from 100 to 1,000 acres at cheap rental, thus while in no way interfering with the mining industry, yet affording an opportunity to those engaged in mining or

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to others to take up areas under these leases instead of the lands remaining idle as heretofore. I feel sure when the position with regard to these leases is understood many persons will feel grateful to the Hon. the Minister for his forethought.

Many complaints are made by mining companies as to the shortness of water for their machinery. The water-supply in the Ohinemuri, Waitawheta, and other streams seems to have dimished greatly during the last few years. So much so has this been the case that all the mining companies who are working their mines to any extent have been compelled to supplement their water-power, which a few years ago was ample, with steam. Probably greater water-power is now required to what was necessary some years ago, owing to the increase of the plants of the various mines. The shortness of water is greatly attributed to the fact of the destruction of the forests. Some system is required to replace this removal of the native bush, something similar to what is in vogue in Norway and, I believe, in other countries, where no one is allowed to cut down a tree without being compelled to plant another within so many feet of it. By this means the normal quantity of water in the streams is not interfered with, and a fresh bush is growing up to take the place of the timber felled.

Thames.

The Thames-Hauraki Goldfields (Limited) properties are all in much the same position as when I last reported. The company was forced to go into liquidation through want of capital, and consequently all work was discontinued on the Queen of Beauty Extended, Deep Sinker, and Deep Levels Special Claims, and the pumping machinery at the Queen of Beauty shaft shut down, much to the disappointment of the inhabitants of this particular part of the district. It is the opinion of many local authorities that if the shaft was sunk to, say, 1,000 ft. good gold-bearing country would be found, and new life given to the industry at Thames.

The May Queen-Hauraki Mine has been in the hands of tributers, who have been working on the reef and leaders about the No. 6 level. Some parties have done well, while others have not earned wages. It is, I understand, the intention of the company at an early date to put the mine and all machinery up for sale at public auction, to be sold to the highest bidder. This is a property which might become payable if the lower levels were opened up, but this cannot be done until the field is drained to 1,000 ft.

The Victoria Company has done very little work. Tributers have been engaged in taking out small leaders, but have hardly been able to make wages. The company commenced a borehole and carried it down a considerable depth on the seaward side of what is called the Seaward Slide, but had to discontinue for want of pipes. New pipes arrived, but were found to be in such a damaged condition that they could not be used without being repaired, a work which is now being carried out. When finished, work will be resumed. This work is of considerable importance, as it may prove that the gold-bearing rocks continue out under the Hauraki Gulf.

The Waiotahi Mine still continues to pay dividends, and has a large number of men employed.

The Moanataiari Gold-mining Company's mine has been worked mostly by tributers, three wages-men only being employed in keeping the main level in repair. This company also intends to sell the whole of its property at auction at an early date and wind up its business in New Zealand. The battery has already been purchased by Messrs. A. and G. Price and Co. for considerably less than it cost.

The Kuranui-Caledonian Company's mine has been worked mostly by tributers. The company did some prospecting on Duke's leader in the Hazelbank section, where there is a considerable area of unprospected ground. For the first 60 ft. or so gold was frequently seen, but later on (although the reef maintained its size) the gold disappeared. A leader, known as the Smithfield, at the same level was worked on but found not payable, and the men taken off and put on to open up some leaders near where the rich patch in the old Caledonian Mine was found in the early days. It is quite possible some rich stone may be found here.

The Kuranui Company have been working steadily with twelve men opening up new and repairing old levels. They have been driving for some time past on a promising lode between the slide and the old Eureka ground, which is now their property, adjacent to which a rich patch was found some years ago. The manager is hopeful that payable ore will soon be found.

The New Whau and New Alburnia have done practically nothing during the past year. Both companies exhausted all their capital, and were for the most part of the time under protection, endeavouring to raise more capital, but could not succeed.

The New Whau has been forfeited, and I understand the Alburnia Company intends to sell to the highest bidder and wind up its business.

The Tararu Creek Company has been employed in extending the Day Dawn crosscut from the battery level with a view to opening up the eastward portion of the mine at a depth of 700 ft. The old Sunbeam workings have been opened up and a connection made with the battery level. A new six-drill air-compressor and new boiler have been purchased and placed in position. For some time no work has been carried on, and the mine shut down pending the raising of more capital. Mr. Powell, the manager, has gone to England for the purpose of consulting with his principals as to future operations. He favours the continuations of the Day Dawn crosscut before mentioned, which will open up new country at 700 ft. from the surface. This drive is of great importance, as it is held that the Tararu Creek district is at the head of what is called the "second gold-bearing floor" of the Thames Goldfield and that such a drive would tend to prove the assertion.

The Eclipse Company has taken out 3,800-odd tons of payable ore, but in the latter part of the year the payable ore in No. 1 and No. 2 levels became exhausted and work had to be stopped. A new low level is now being put in.

Prospecting has been going on in a few other small properties in this locality, but without anything very encouraging being found.

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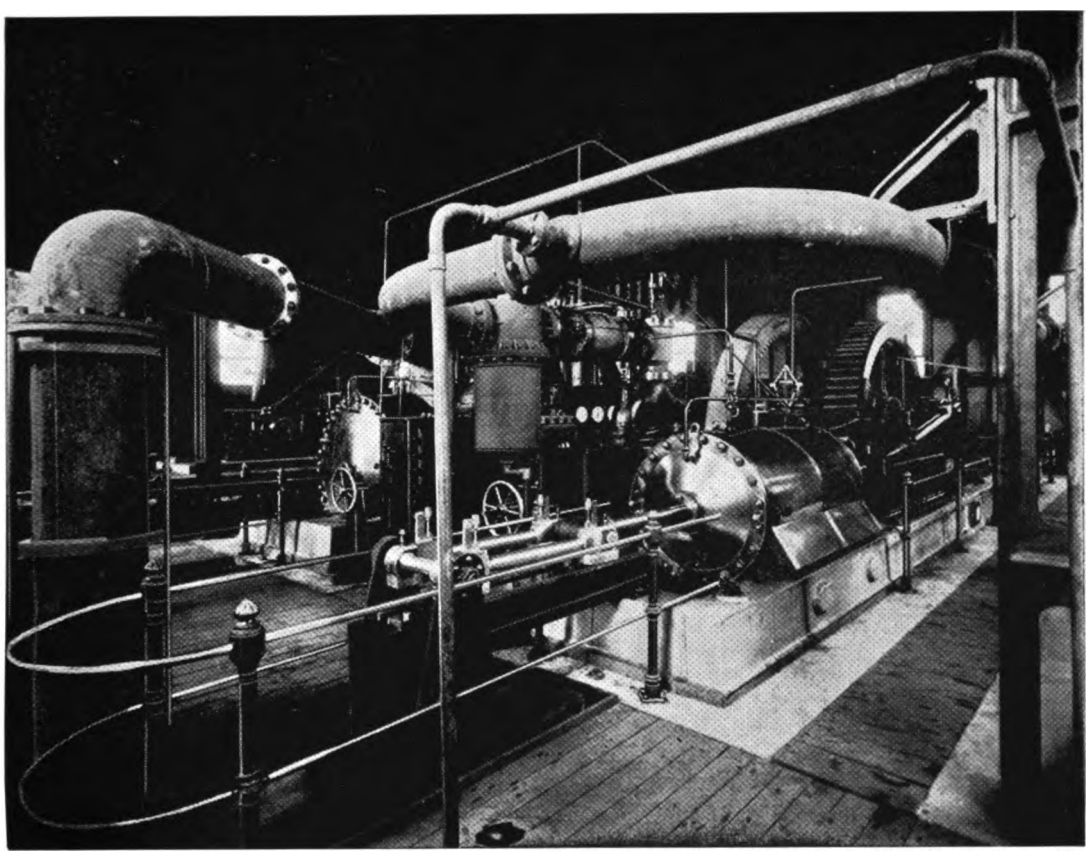
Panning a Prospect, Thames Goldfield.



Face p. 142.] Pumping-engine, Queen of Beauty Shaft, Thames.

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The Nonpareil Mine, the property of Mr. William McCullough, has been worked entirely by tributers, who have been working on the Liverpool Boys' reef and the various leaders. The ore crushed, 208 tons, gave a return of £559.

The Fame and Fortune has also been worked by tributers. Work was mostly confined to the Balmoral section, where the Golden Age reef has been operated on and good general dirt obtained. A little picked stone has been obtained from the leaders in the upper levels.

The West Coast is still worked by its owner, Mr. John Northey. The various small leaders have been worked on, and 14 tons of ore crushed for a return of £242.

The Puru Consolidated Company's mine has been let on tribute to G. Tetley and party, who put through 455 tons for a return of 127 oz., of the value of £317. The tribute has now been given up, and the company are employing four men in extending the No. 2, and rising on the reef at different points.

The Monowai Company has had thirty-five men employed in opening up the mine generally and in driving and stoping on the reef at No. 3B level upwards. The reef is 30 ft. wide in some places, and has been cut through at various places to test its value. The payable ore so far found extends from 80 ft. to 100 ft. along the reef, and is very refractory. The ore is concentrated and the concentrates shipped to Sydney for treatment, and the balance treated by cyanide at the company's plant at Waiomo.

The Broken Hill, Victory, Hector McDonald, and a few more small areas are being prospected, but no returns of gold have been sent in.

The Bullion Mine has been worked by tributers, who did a large amount of prospecting. The ore crushed was obtained from the Sheridan section, and gave a return of 72 oz. from 20 tons.

The Mahara Royal Company, an English company under the wing of the Standard Corporation of England, was wound up in consequence of the failure of the latter, and the mine and property sold to Mr. H. H. Adams, on behalf of the Tairua Broken Hills Company. It is the intention of the purchasers to put in a low level and test the ground thoroughly at a depth before removing the machinery. A contract has been let and work commenced.

The Claremont Claim, owned by Mr. George Bryant and worked solely by himself, still continues to yield payable quartz. During the year 3 cwt. 2 qr. of specimens have been crushed for a return of £701 17s. 6d. This is a really wonderful little piece of ground; year after year large returns are obtained almost wholly from specimen leaders.

The Gloucester, Gloucester Extended, and Thames Talisman have been prospected, but nothing of a permanent nature obtained.

The May Queen Extended property has been consistently worked by the company. The south crosscut was extended and the reef met with after 30 ft. of driving. In cutting through dabs of gold were seen, and it was deemed advisable to drive east and west on the reef. The eastern drive was taken along for 125 ft., but the ore did not improve, and stoping was resorted to, and 107 tons broken out and crushed for a return of 53 oz. 14 dwt., valued at £150. This return not being as good as the first prospects led the company to expect, work in this direction was stopped and the men put on to extend the crosscut with the object of cutting the Odd Fellows reef.

The Mananu Gold-mining Company carried on operations with fair results until September, when the block of payable ore gave out. All work was stopped pending the reconstruction of the company. More capital having been raised, the company decided to test the ground at a greater depth, and have commenced a low level. They also decided to work the reefs which outcrop at the surface, but on which no work had been previously done.

The Whangamata Proprietary Mine has been under protection for the greater part of the year. Lately the property was sold to a syndicate, who are now trying to raise capital for the purpose of testing the lower levels. Mr. Mitchell, an American mine-manager, is of opinion that the low levels have not had a fair test, and that there is every prospect of payable ore being found.

The Tairua Broken Hills Company have had a very successful year. The mine is now one of our principal gold-producers, 9,921 oz. of bullion, valued at £19,097, having been won during the year. The prospects are as good as ever, and it is confidently expected that payable returns will be obtained as regularly this year as last. The mine is now well opened up, and large bodies of payable ore in view. An average of fifty men has been employed.

Several other small claims in the vicinity have been prospected, but the Taniwha is the only one in which any favourable prospects have been discovered.

The Golden Belt has been purchased by Mr. H. H. Adams, who is prospecting and sampling the various reefs. The results obtained are sufficiently encouraging to warrant the erection of a battery, and timber is now being cut for the purpose. A considerable amount of work has been done repairing and opening up old tunnels.

The Klondyke Gold-mining Company have erected a five-stamp mill, connected with the mine by an aerial tramway. A water-race 10 chains long has been constructed to provide the motive power. Very little other work has been done during the year.

The Sheet Anchor and a few more small holdings have been prospected. The Sheet Anchor is under offer to an Auckland syndicate, who put in a low level for a considerable distance; but, not meeting with the reef which was cut in the upper level, it was decided to drive on the reef at the higher level. This reef has been driven on for 200 ft., and a rise put up to prove its value. Although it carries gold it is not valuable enough to warrant the erection of a crushing plant.

Coromandel.

Mining during the past year has not been very prosperous. Many of the leading mines have been compelled to close down, but during the last six months there has been renewed activity, evidenced by the number of claims taken up.

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Kauri Block.

In the Hauraki Mine operations were entirely suspended, the machinery dismantled, and the mine let on tribute. The tributers have been very successful. The mine in their hands has already produced many thousand pounds, and shows no signs of falling off. An Auckland company has bought the property, and they have erected pumping machinery, which is now rapidly unwatering this and the adjacent Bunker's Hill Mine. Much may yet be expected from this old gold-producer.

The Bunker's Hill Company in the earlier part of the year suspended operations and let their mine on tribute, with the result that in two months over three thousand pounds' worth of gold was obtained; and the company are now working steadily with encouraging results, and excellent prospects.

The Hauraki Freeholds property has not been very successful, but the payable reefs found in the Bunker's Hill have been proved right up to the Freeholds boundary, so that there is every reason for believing that this mine will shortly be in a way to produce largely.

In the Golden Pah tributing has been carried on with fair success.

Driving Creek.

The Kapanga Mine has been entirely abandoned and dismantled, much of the machinery having been removed.

Tokatea.

The Royal Oak Company have continued operations, partly in proving the lower levels, with the result that bullion to the value of about £8,000 has been won.

In the New Four-in-hand Company's properties operations were suspended, the claims surrendered, and one new claim, comprising only a portion of the old ground, taken up. This is now under protection.

In the New Tandem, which is close to the New Four-in-hand, good returns have lately been obtained.

The Harbour View Syndicate (the old Harbour View Claim) is undergoing vigorous operations by a syndicate (chiefly local), and good prospects have been obtained.

The West Tokatea Mines are now under protection, after a good year's work prospecting and developing.

The Hauraki Mines (Limited) have worked during the year, but with very little encouragement.

Kennedy Bay.

Towards the ranges above Kennedy Bay and towards Cabbage Bay there has lately been some vigorous prospecting. Many claims have been granted up the Omoho Stream, and over the ridge towards Cabbage Bay good loose stone has been obtainad, but as yet no defined reefs.

Cabbage Bay.

Operations have been recommenced in this district by the White Star Company. In the White Star claims prospecting and developing has been carried on successfully for several months with encouraging results, gold showing freely in the stone.

Mahakirau.

Prospecting and developing on the Macaronic claims have been encouraging, with the result that the owners have decided to instal a small battery, which is now in course of erection.

Kuaotunu.

The Waitaia mines have had payable crushings throughout the year, and have lately taken over the Juno battery.

The Handsworth has also produced good returns during the year.

Tributers in the Irene (Hauraki) property have had very fair returns.

The Kuaotunu and Great Mercury properties are also being worked by tributers, returns being very fair.

Kapowai Block.

Much development-work has been done in the Kapowai claims. Good ore has been secured, and lately several payable crushings have been obtained.

Other prospecting has been carried on in this district with fair results.

Opitonui.

Mining here is practically at a standstill owing to the Kauri Freeholds properties having been closed down.

Tiki.

The Progress-Castle Rock and Vaughan Claims have been relinquished by the company, and taken over by private individuals, who are now prospecting with fair success.

Karaka Block.

Prospecting has been carried on in this locality and good stone obtained.

The public battery has continued good work during the year in treating small parcels of ore for prospectors and others.

The School of Mines has also continued its course of instruction with excellent results.

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Te Aroha.

The mining in this district is what may be termed dead. There are only one to two small holdings doing a little work, principally carried on by the owners.

A small syndicate has taken up a portion of the old Tui Company's property, and is at present taking out lead and silver ore with a view to sending the same to New South Wales for treatment. It is said the ore can be treated there so as to remunerate those engaged in mining the same. Should this prove correct this should turn out a good speculation, as it is stated there is an abundance of such ore in the ground.

The only real mining at present is that being carried on by Mr. Hardy at Waiorongomai on a property which he has held for some time, and which formerly was owned by the New Zealand Exploration Company. He has reduced the area. During the time he has had the property he has put through his battery ore resulting in £8,250, this extraction being about £2 8s. per ton. The process of treatment is wet crushing and concentration. The concentrates are sent to the Dapto Works, New South Wales, for treatment. Present indications show an abundant supply of ore.

Ohinemuri County.

Komata.

The Komata Reefs Company's mine, having resumed crushing, has during the past year succeeded in making returns every month to the value of about £2,500, which I trust will be permanent and gradually increase. This is the only mine in this locality which is paying its way. The total amount of gold produced since it commenced crushing is about £80,000.

There are a few other claims in existence at the Komata. The Komata Bonanza is spoken of as being a likely piece of ground to be heard more of later on. The others are in a languishing state for want of means to carry on development-work.

The Hikutaia Syndicate properties, which have been extensively prospected (a great deal of useful development-work having been done), have so far not proved remunerative, although small returns have been from time to time obtained at its five-stamper mill, but not sufficiently valuable to warrant a larger plant being erected. The ore is of poor grade, and so far none of a richer quality has been unearthed. A considerable amount of capital has been spent on this property, which so far has yielded nothing to the owners.

The Maratoto Gold-mining Company has carried out a considerable amount of development-work, and possess a small crushing plant, but up to the present their efforts have not resulted in anything to warrant a large outlay of capital. The owners, however, are very persevering, and it is to be hoped they will meet with better fortune in the no-distant future.

There are a few other claims in this neighbourhood, which have not so far succeeded in unearthing anything payable.

Waitekauri.

The Waitekauri Gold-mining Company have been extremely unfortunate during the past year. They appear to have worked out the payable ore at hand, and have been devoting their time in developing and opening up their properties. I trust when next reporting to be in a position to chronicle some good returns from this company's mine.

The Waitekauri Extended Company's properties have been taken over by the Waitekauri Company, as also those formerly owned by the Grace Darling Company. The Waitekauri Company possess plenty of crushing-power, if it could only drop upon some good-quality ore.

The Waitekauri Cross Company have abandoned their property, and removed the machinery, which has been shipped away. The company spent some thousands of pounds in endeavouring to pick up the Waitekauri Company's chute of ore, without success.

The New Zealand Jubilee Company's property has been further developed, but for the last few months it has been protected, to enable the general manager to proceed Home to interview the owners as to the course to be adopted for the future. It is reported that the development-works under the change of management have disclosed better prospects, which will probably lead to a further expenditure of capital. It is anticipated that with the return of the general manager mining operations will be continued in this mine, I trust with favourable results.

Karangahake.

Mining has been fairly active in this portion of the district, and the New Zealand Crown Mine continues to merit its name as a consistent gold-producer. The other mines, however, I regret to say, at times are not able to put out returns continuously.

The New Zealand Crown Mine so far has proved itself to be the premier mine in this locality. The owners have spent a very large sum in development and machinery. Every year large sums are spent on improvements to the property and plant. During the last twelve months an engine and boiler have been added, besides more powerful pumps, and further air-compressing machinery is being erected. The decrease of water in the Ohinemuri River has made it necessary to supplement the water-power with steam. I trust in the course of the next year or two, as the development-works extend, to be in a position to report this mine as being one of the best in the district. Should the developments realise present anticipations this mine has a great future before it, and I look to it to become one of the main supports of the field. It is now the second largest employer of labour on the peninsula.

The Talisman Extended Company's properties were making no returns for some months, but during the past four or five months fairly good returns have been made, which is very encouraging, especially if they continue monthly. The crushing plant consists of a battery of fifty stamps, which I am informed has not been able to work with the full number of stamps since it resumed

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crushing, owing to the ore not being at hand rapidly enough to keep the whole going continuously. The company also has erected an engine.

The Woodstock Company appear to be remarkably unfortunate. A great amount of capital has been sunk in this mine without returning anything to the proprietors. The battery runs for a few months, when it ceases to crush. Fair returns are made for the time, but the supply of ore is not sufficient to keep it working. The quartz here is very hard, and evidently so far of low grade. Recently boring operations have commenced, which it is hoped may result in finding something more workable and payable.

A syndicate have taken up a greater part of the Ohinemuri from its junction with the Waihou as river claims, some eight or ten of which these gentlemen now hold. A treatment plant has been erected near Waihi. It is proposed to treat the river deposit by raising it with a suction pump, and after treatment return it to the river again. It is anticipated that 10s. per ton will be the amount recovered, which it is said will leave a small margin of profit after paying expenses. Conditions have been imposed so as to guard against injury to the banks of the river, or to the riparian landowners, or to the public interests, the Warden reserving to himself the right from time to ime to impose such conditions on the licensees as he may deem fit in the public interests. It is a new undertaking, which, if successful, will find employment for several men

Owharoa.

The Ohinemuri Syndicate's property here may almost be looked upon as abandoned. Very little work has been done upon the tunnels this year. The gold in these properties seems to have disappeared, and great difficulty is experienced in making a fresh discovery. Some good gold was obtained here in the early days of the field, and I presume will be again some day.

The only other property in this locality upon which work is being carried on is the Rising Sun, the owners of which have very pluckily striven to make a mine of this claim, but so far their perseverance has resulted in nothing remunerative. A considerable quantity of useful development-work has been carried on for some years. Nothing is done except what is permanent and useful. Assay-tests have been made of the ore, some of which have proved satisfactory, but not sufficiently so to warrant any large expenditure upon the property. Any day, however, better prospects may develop, in which case this claim would be the means of reviving mining in this locality. There is an assay plant on the ground, and the owners only require the smallest encouragement in the grade of the ore to cause them to extend their workings. I believe this property will turn out a gold-producer shortly.

WAIHI.

The Waihi Company's mine still maintains its character as one of the largest mines in the world; indeed, its output of gold per month for this year seems to rival that of any other mine I know of, the returns having averaged £53,000 monthly. It still continues to find employment for over a thousand men, and were it not for it the Town of Waihi would be deserted, as the other mines, unfortunately, are unable to employ more than a very limited number of men. So long as this mine continues to prosper there will always be hopes of some of the others securing payable reefs, which will encourage them to persevere with their uphill search for them. With the exception of the Waihi Company, none of the other mines have obtained any gold during the year.

Waihi Grand Junction Gold-mining Company.—Grand Junction Special Quartz Claim: At the beginning of the year this company were driving on the lode at the 500 ft. level of No. 1 shaft, and drove west another 92 ft., making a total of 161 ft. in that direction. A rise on the lode was put up 88 ft. from the main crosscut. The lode was driven on easterly 87 ft., making a total distance of 187 ft., and at a distance of 113 ft. a winze was put down 27 ft. To communicate with No. 2 shaft a crosscut was driven 86 ft.

Waihi West Special Quartz Claim: The drive at the 500 ft. level on this property was continued north for another 465 ft., when a rise was put up 113 ft. to connect with the B shaft and to afford ventilation. A winze was also commenced at the B shaft and put down 93 ft., and connection made. By arrangement, the Waihi South Gold-mining Company commenced a drive at the 500 ft. level of the C shaft and drove 132 ft. During the year the company have therefore driven 880 ft., sunk 107 ft., and risen 143 ft.; total, 1,130 ft. The Grand Junction Claim was under protection for six months, but during that time a building to contain a fitters', carpenters', and blacksmiths' shop was erected.

Waihi South Gold-mining Company (Waihi South Special Quartz Claim).—Work was commenced again on this property about July. In August, arrangements having been made with the Waihi Grand Junction Company to use their C shaft in the Waihi West Claim, a drive was put in at the 500 ft. level in a south-easterly direction, and the reef was found and proved for 90 ft. The drive was then continued in a southerly direction towards the Waihi South boundary, and work is still being carried on in that direction.

Waihi Consols Gold-mining Company (Waihi Consols Special Quartz Claim).—Practically the only work done by this company was to test their property by boring operations, but through several unforeseen causes this was not successful. The company has since reconstructed and formed into a limited-liability concern.

Waihi Extended Gold-mining Company (Waihi Extended Special Quartz Claim).—The shaft on this claim has been sunk another 136 ft., making a total depth of 520 ft. A drive was put in in a south-easterly direction and continued for 206 ft., and another in a north-westerly direction for 470 ft. from the shaft, but no reef was intersected. Work is being continued, and it is hoped before long that payable ore will be found.

Waihi-Gladstone Gold-mining Company (Waihi-Gladstone Special Quartz Claim).—A considerable amount of work has been done on this claim, including the erection of a five-stamper

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battery, which was completed in December. The company have driven 150 ft. in their No. 3 level, and 150 ft. in No. 4 level. A shaft has been sunk 100 ft., and connected with Nos. 3 and 4 levels. A rise of 123 ft. was put up in No. 3, and a crosscut of 120 ft. connecting with No. 4. About 500 tons of ore are on hand ready for crushing, and the battery will start work as soon as sufficient water is available. A dam has been constructed, and it is hoped will be sufficient to hold all the water required. An average of eleven men has been employed during the year.

Ohinemuri River Syndicate.—This company has pegged out several claims in the bed of the Ohinemuri River, and intend to work the tailings known to exist there. For this purpose they are erecting a plant by the Waihi Company's dam, which is expected to be ready for working about the end of March. This is a private enterprise, and the promoters have spent between £3,000 and £4,000 on the plant alone. It is estimated that ten men will be sufficient for the work. About 20,000 tons of tailings are supposed to have accumulated in the dam alone, so that if they are payable the syndicate should be successful in their enterprise. About 50 tons will be treated daily.

Waihi Beach (Limited) Gold-mining Company.—The properties of this company have been under option to a London syndicate, who have failed to raise capital to work the ground, so the company have decided to start operations themselves, and work will be commenced immediately.

Royal Standard Special Quartz Claim.—This claim is situated at Wharekiraupunga, between twenty and thirty miles from Waihi. A parcel of ore was sent to the Thames School of Mines and assayed £3 per ton, consequently about 60 tons was broken out, and the owner of the claim is now trying to raise capital to erect a small battery so that he can treat the ore on the ground.

Waihi Consolidated (Limited).—Boring operations were continued without much success on this claim. The company intend to further prospect the ground by the same methods.

There are a number of other claims in the district, but practically only prospecting-work has been done on them, and that not with any great success.

I have, &c.

The Under-Secretary, Mines Department, Wellington. R. S. Bush, Warden.

Mr. Warden Roberts to the Under-Secretary for Mines, Wellington.

Sir,— Warden's Office, Tauranga, 10th March, 1903.

I have the honour to report for the information of the Hon. the Minister of Mines that very little progress has been made during the past year in developing the mining industry in this district.

Work on the field has been confined to prospecting on Te Puke gold reefs and other properties.

The prospects of Te Puke Mine are reported to be most encouraging, and the new owners are very sanguine that the development-works to be put in hand immediately will thoroughly warrant a fair expenditure of capital, as the lode is an extensive one, and though the ore is of low grade it is considered payable.

Prospecting has been carried on at Clarke's Freehold, Fahey's Freehold, the Ben Lomond, and the Sisters' Claims, but the whole future of the field depends on the successful development and exploitation of the Te Puke Gold Reefs Company.

I have, &c.,

J. M. Roberts, Warden.

The Under-Secretary, Mines Department, Wellington.

Mr. Warden Smith to the Under-Secretary for Mines, Wellington.

Sir,— Warden's Office, Blenheim, 14th May, 1903.

I have the honour to forward herewith statistical returns for the Marlborough Mining District covering the year ended the 31st December, 1902, and beg to report as follows on the district:—

It may at once be said that no very important developments, viewed from a mining standpoint, have occurred during the year under review.

In the Upper Wairau dredges were placed on two claims—the Pride of Marlborough and Omdurman—but were not successful, and operations were in consequence discontinued. Both dredges have since been sold, and it is, I understand, intended to try some of the other claims with them.

In the Jubilee Quartz-mine operations have been directed towards developing the mine, the total extent of driving, sinking, and rising amounting to 492 ft. During the year 645 tons of ore was crushed, yielding 151 oz., the average number of men employed being twelve.

Some work has been done on a few of the other quartz claims, but nothing has occurred calling for special mention.

In the Havelock portion of the district sixty-nine miners' rights were issued during the last twelve months, there being about that number of men engaged in mining pursuits. The only claim calling for special mention is the Golden Point Dredging Company of Wakamarina, whose operations have been fairly successful, a well-equipped dredge being kept constantly at work, the returns from which have reached as much as 30 oz. for a hundred hours' work. Other dredging claims have been granted, but dredging machinery has not yet been placed on them.

I have, &c.,

T. Scott Smith, Warden.

The Under-Secretary, Mines Department, Wellington.

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Mr. Warden Heaps to the Under-Secretary for Mines, Wellington.

Sir,— Warden's Office, Nelson, 27th May, 1903.

I regret that through delay, in the first place in being furnished with returns, and subsequently owing to extreme pressure of manifold official duties, I have not been able to sooner comply with the request contained in your circular of the 29th January last for a general report on the mining industry in my district for the year 1902.

While the past year has been unsatisfactory in many ways from a mining point of view, some of our largest and at one time most hopeful enterprises having proved disappointing, there has, however, been compensating developments, as I think I shall be able to show.

Dredging.

Four or five dredges have been completed and got to work on their respective areas, but the results so far have been most disappointing, and dredging has received a severe check, so severe that only great perseverance and the occurrence of some encouraging development can stimulate it into activity.

Hydraulic Sluicing.

I regret to have to report that one of our most enterprising and largest companies engaged in sluicing has had to suspend work after spending many thousands of pounds and finding employment for a large number of men. Its valuable water-rights and other privileges, together with the plant, have been sold for a comparatively small sum. On the other hand, two other large companies have met with such an amount of success as has induced them to continue their operations with vigour.

Quartz-mining.

This class of mining has been confined to the Taitapu Estates, where most encouraging results have been obtained at the two mines at work.

Alluvial Mining.

Comparatively little of this class of mining has been carried on during the year.

Prospecting.

To judge by the number of applications for prospecting licenses—namely, 13—prospecting is being actively pursued in the Collingwood part of the district, and I hear of finds of coal and plumbago, but of no marked finds of gold.

Coal.

The management of the Puponga Mine has changed hands, and the new management appears to be laying itself out for working the mine on a large, vigorous, and businesslike scale. The coal is already in the market in small quantities, and is much appreciated, and as soon as the new and greatly improved wharf and tramway are completed considerable shipments will at once be made. I am informed that this now enterprising company have obtained an option over the adjoining leases, the property of the Cape Coal Company, with a view to purchasing them and working the two areas as one concern. Over fifty men are employed in or about the mine.

In addition to the discovery of coal on the Taitapu Estate mentioned later on, coal of good quality, judging from the samples I have seen and the reports of experts, has been discovered in a new locality on Crown land at West Wanganui, and, as it is near to deep water and easy of access and shipment, the discoverers are sanguine of having it in the market at an early date. They are now applying for a lease of 500 acres.

Discoveries have also been made at Wangapeka and Belgrove, and I hear that a prospecting company has been formed to further prospect these localities and the Waimeas.

Iron.

At length there appears to be every prospect of the well-known and much discussed iron-deposits at the Parapara being worked by a strong and competent company. I am informed that a specially selected expert is on his way out to advise the management as to starting operations. It is not too much to expect that the current year will see the commencement of a great iron industry in this district.

Following the practice of previous years, I report more in detail what has been done in the various localities of my district, commencing with—

Collingwood.

During the year thirteen prospecting licenses, five special, three extended, and two ordinary claims have been taken up.

There are five dredges in this locality. Three only have done work, and these three cannot be said to have been fortunate so far. Accidents have happened to machinery or plant, and a quantity of barren ground has been met with. There are indications that much patience and discrimination as well as capital will be needed if the dredging industry here is to become the success which old and experienced miners have pronounced it should be.

The Kaituna dredge was kept at work pretty constantly at first, and I am informed the returns have more than paid working-expenses. The yield of gold for the period the dredge was working was 190 oz. 18 dwt.

The returns from the dredge at Parapara have been disappointing, and the directors have decided to close down, pending the decision of the shareholders. Since the end of the year I hear the dredge has sunk.

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The Parapara Hydraulic Sluicing and Mining Company (Limited) has opened up new ground during the year, and, according to information courteously supplied by the secretary, secured 783 oz. 6 dwt. 14 gr. for the year's work.

The Slate River Sluicing Company (Limited) have done much work during the year, and have won 295 oz. 17 dwt. 6 gr. of gold. Owing to the non-completion of the dam as originally designed, the company's works have at times been hampered by the slackness of the water-supply. The gold is undoubtedly there, and no doubt this enterprising company will take vigorous steps to extract it to the best advantage. An unfortunate lawsuit with their contractor for the erection of the dam has doubtless had the effect of checking development, and it is to be regretted that the matter is not yet settled.

Golden Blocks (Taitapu), Limited, is a dividend-paying quartz-mine, which has been very successfully worked by its very competent manager, Mr. Frank H. Johnson, from whom I learn that £2,105 3s. 6d. has been paid in dividends during the year. The quantity of quartz crushed was 2,402 tons, yielding 2,119 oz. of gold.

The Taitapu Gold Estates (Limited) has had a successful year, 3,442 tons of quartz crushed from the Golden Ridge and Anthill Mines having yielded 2,223 oz.; and, in addition to this, the estate has been recently systematically prospected for coal by an expert, who has discovered valuable seams of a superior quality and conveniently situated for working and shipping in deep water. A report has been sent to the Home directors, and it is confidently expected that instructions to commence work on the seams at once will be shortly received. This may possibly lead also to the opening-up of some very fine forest lands which heretofore have been little explored, owing to the wetness of the country and the denseness of the undergrowth, combined with the distance from settlement and the wretched condition of the road.

Takaka.

During the year only four mining privileges were applied for. Three were granted and one withdrawn.

The Takaka Sluicing Company, at the Pupu, is keeping up its reputation as a dividend-paying claim, having declared dividends amounting to £1,368 during the year. During the same period calls were made amounting to £404 13s. 6d. The claim produced 984 oz. of gold during the year. It is worked by three shifts of five men each. The men are paid 8s. per shift.

Malone and Anderson have given over their shares in the Extended Claim at the Pupu to their third mate, Roach, who is fossicking in the shallow ground.

At the Anatoki, Jackson's Extended Claim has been taken over by Gibbs and James, who are bringing up the tail-race to prove the ground; as yet they have got nothing to pay them for their trouble.

At Sheepy Flat, Morrison and others are employed by the shareholders in bringing up a tail-race from the Anatoki River, but from the rough nature of the ground and the enormous stones they have had to contend with, the work is progressing very slowly. The prospects found when the claim was taken up make the shareholders sanguine that they have a good venture.

Motueka, including Mount Arthur Tableland.

The Courthouse at Motueka, being on the eastern side of the river, is outside the mining district; also I may mention that, the Postmaster being the Clerk of the Warden's Court, the Warden's office is at the post-office instead of at the Courthouse, which is some distance away. If it were at the Courthouse, as it no doubt should be, it would take the Postmaster too much away from his postal duties. The present arrangement works very well as far as the public are concerned, but causes the carrying backwards and forwards of statutes, books, and papers on Court days. As far as I have information, the only part of this district where mining is being carried on is the Tableland, where only about seven miners are working for a bare living. There is a prospect, I believe, of some enterprising Aucklanders working ground on a larger scale than has heretofore been attempted, with water brought in from Lake Peel. There are seven water-races, five tail-races, and three dams in existence in the locality.

Nothing whatever appears to have been done by the holder of the prospecting license for asbestos.

Nelson, including Wangapeka, Sherry, Tadmor, and the Baton.

Here again the Warden's Court held at Nelson is outside the mining district, and is distant some twenty-five miles from the nearest part of it, entailing much loss of time and money when applications are objected to and witnesses have to be brought long distances, as has recently been the case. The only nearer Courthouse is at Brightwater, which would save twelve miles, but I should lose the services of Mr. C. H. Webb-Bowen as Warden's clerk, services I value highly, as he has had a long experience of Warden's Court work on the West Coast, and is a very capable officer. Moreover, he is always willing to assist and give the benefit of his experience to the less experienced clerks in the district.

Wangapeka.—After much delay the Wangapeka Company's dredge was completed and taken across the Wangapeka River to its claim situated above Blue Rocks. After working for a short time it was found that the ground was deeper than was anticipated, the elevator was too short to keep the tailings clear of the dredge, and the gold-saving appliances appear to have been defective. The dredge has now been dismantled with the intention of lengthening the ladder and fixing up an up-to-date elevator and gold-saving tables at a considerable cost. The directors appear satisfied with the prospects obtained during the short time the dredge was at work. A seam of brown coal has been discovered in close proximity to the dredge claim, which will, it is hoped, materially contribute to the economical working of the dredge.

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At the Sherry, Mr. Gardiner is still working with his hydraulic plant on private property, and it is reported that he is getting fair results.

On the Baton and Rolling Rivers only two or three men are working.

Work on the railway extension to Tadmor and roadwork generally has induced several old hands to leave their claims for the more certain results of weekly wages, showing that alluvial mining in this locality is only followed when steady employment is not to be had.

In addition to the usual returns from each centre, I append a comparative return showing the quantity and value of gold exported from this Port of Nelson during the calendar years 1901 and 1902. It will be understood, however, that this return does not necessarily represent the whole of the gold won in the district, as no doubt some finds its way out of the district in other ways than through the Nelson banks.

TOTAL QUANTITY AND VALUE OF GOLD EXPORTED FROM PORT OF NELSON DURING CALENDAR YEARS 1901 AND 1902.

1901.

Quarter.	Quantity. Oz. dwt. gr.	Value. £
2nd March	3,787 9 14	14,084
2nd June	556 7 0	2,225
2nd September	1,136 18 0	4,548
2nd December	1,941 12 0	8,052
Totals	7,423 6 14	£28,909

1902.

2nd March	822 6 0	3,288
2nd June	2,470 8 0	9,858
2nd September	2,801 7 6	11,041
2nd December	619 3 0	2,447
Totals	6,713 4 6	£26,634

Decrease in 1902, 709 oz. 2 dwt. 8 gr.; value, £2,275.

I have, &c.,
WILSON HEAPS, Warden.

The Under-Secretary, Mines Department, Wellington.

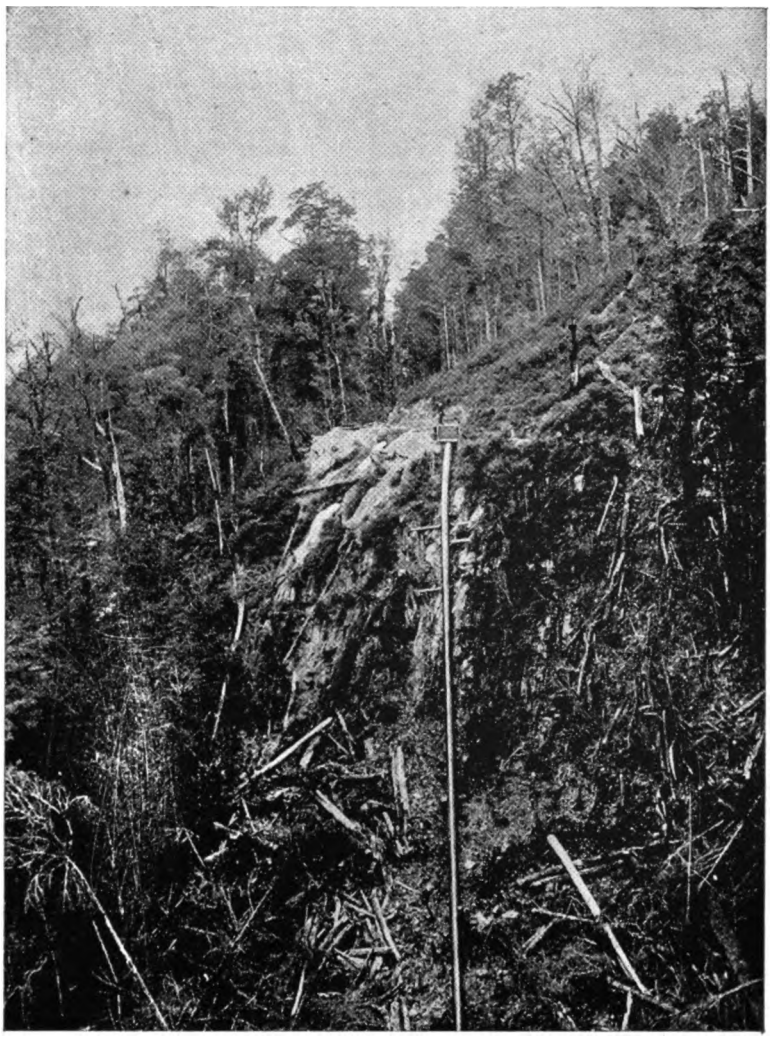
Mr. Warden HAWKINS to the UNDER-SECRETARY for MINES, Wellington.

SIR,— Warden's Office, Greymouth, 12th May, 1903.

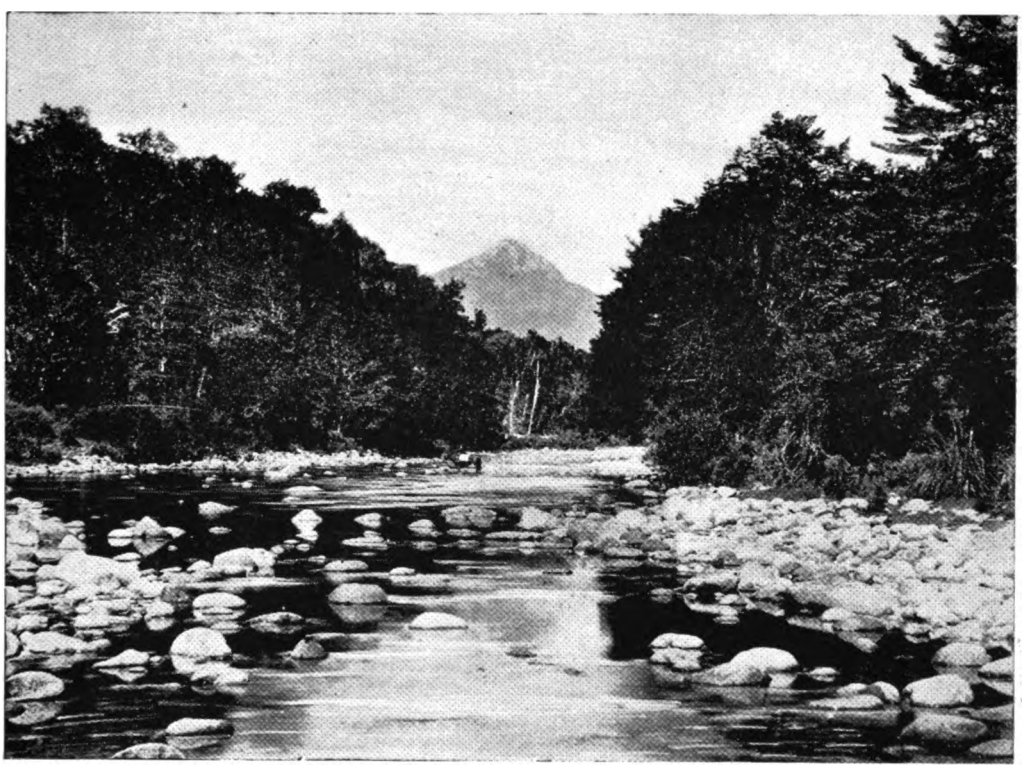
I have the honour to forward herewith statistical returns for the year ended 31st December, 1902, together with detailed reports on the several subdivisions of the mining district under my charge.

REEFTON-INANGAHUA DISTRICT.

Keep-it-Dark Quartz-mining Company, Limited.—The following report was submitted to the shareholders at the annual meeting held on 27th December last:—Mine department: Stoping out quartz from Nos. 1 and 3 levels has been carried on, and, with the exception of a block of rather low-grade quartz in the west end of No. 3, these two levels, so far as is at present known, are practically worked out. Early in the year the best and thickest part of the reef, which was being stoped in No. 3 level, pinched down to very small dimensions. This break in the largest part of the reef, which was quite unexpected and impossible to foresee, has very much reduced the average yield per ton of the year's crushing, and at the same time increased the cost of production, the shareholders in consequence not receiving anything like a fair profit on the year's work. But according to present appearances the reef opened up in No. 4 level will make good for any deficiencies in No. 3 level, the stone so far being altogether of a better quality than anything which has been worked in Nos. 2 and 3 levels, and up to the present time the No. 4 level has been driven on the reef 130 ft., the reef being from 4 ft. to 15 ft. thick, the face of the level being now under the winze sunk from No. 3 level. A rise has been put up 40 ft. and connected with bottom of winze, and completed a few days. The level will now be further extended on the reef. 11,405 tons of quartz has been raised from the mine and sent to the battery, the total cost being £6,935 5s. This amount includes all development-work, driving crosscuts and levels, sinking winzes and putting up rises, prospecting-drives, and keeping old levels in repair, also upkeep of winding-engine and renewal of wire ropes, and everything which has been done in the mine, except the sinking of the main shaft and construction of two chambers, the cost per ton being 12s. 1½d. The contract for sinking main shaft 200 ft., which was commenced about two months before the last annual meeting, has been completed. The contract was extended to sink 300 ft., and two chambers had also to be constructed—one at No. 4 and one at No. 5 level. The crosscut from No. 4 chamber intersected the reef at 256 ft. from shaft, and the crosscut from No. 5 chamber, which is now being driven by contract, is already in 120 ft.; and it is expected that the reef will be met with about 350 ft. from the main shaft. The total cost of sinking main shaft 300 ft. and cutting two chambers was £1,857 4s. 6d., being £6 17s. per foot for the shaft and £411 each for the chambers. Battery department: 11,405 tons of quartz has been crushed for the year, yielding 3,395 oz. of melted gold, valued at £6,507 0s. 3d., the yield being 4 dwt. 4½ gr. per ton. The expenses for the year, including the upkeep of the head-race and tail-race, all alterations and renewals of



Progress Water-race: Siphon at Deep Creek.



Face p. 151.] Inangahua River: Close to Intake of Progress Water-race. C.—3.

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plant, and river-protection, amount to £1,383 13s. 3d., being a small fraction over 2s. 5d. per ton. The battery is in good order. Early in the year the cam-shaft, which has been so long in use, showed signs of giving way; a new one has been procured should the old one break down.

Cyanide department: The alteration which has been made in the manner of conveying the tailings into the leaching-vats is a decided improvement. Settling-tanks have been erected, into which the tailings are run from the elevating-wheel, and afterwards, when well filtered, are trucked into the leaching-vats in a dry state; this method mixes the fine slimes and the coarser sands well together, so that there is now no trouble whatever with the percolation. For several months during the year antimony has been troublesome, causing the extraction to be not quite so successful as it otherwise would have been. The most of the ore which contained antimony came from No. 2 level, and, as that level is for the present done with, it is hoped that in future the mine will be free of antimony, as there is no trace so far in No. 4 level. The amount of 1,408 oz. 19 dwt. 3 gr. of bullion has been obtained during the year, valued at £4,210 9s. 10d. The extraction, computed on the total tonnage crushed, is equal to 7s. 4½d. per ton. The working-expenses for the year, including cyanide, zinc, and all material consumed, has been £2,135 19s. 7d., being very nearly 3s. 9d. per ton on the gross tonnage. The expenditure of £337 6s. 9d. on alterations and additions is not included in the above sum, the profit for the year being £1,737 3s. 6d., equal to 3s. 0½d. per ton.

The following reports on the Consolidated Goldfields of New Zealand (Limited), the Progress Mines of New Zealand (Limited), and the Welcome Gold-mining Company (Limited) have been supplied by Mr. E. W. Spencer, general manager for the respective companies:—

Consolidated Goldfields of New Zealand (Limited).—(1.) *Wealth of Nations.*—Owing to the impossibility of working at any greater depth with the present water-wheel, which is used to hoist with, the bottom of the mine remains the same as at the corresponding period last year, with the exception of a winze which is being sunk from the bottom (800 ft.) level. This at the end of the year had reached a depth of 50 ft. A crosscut from this level had also been run out towards the site of the new shaft. This constitutes the total amount of development for the year. Stoping was carried on in a general manner between the 350 ft. level and the 800 ft. or bottom level, producing 11,566 tons of ore, which, when crushed, yielded bullion to the value of £17,568 1s. 4d. by amalgamation, and concentrates to the value of £926 7s. 1d. At the cyanide-works 7,726 tons, representing 66·799 per cent. of the tonnage milled, were cyanided, yielding bullion to the value of £4,667 11s. 2d, or 12s. 0·993d. per ton treated. Of this amount, 3s. 1·788d. per ton was absorbed in working-costs, leaving a profit per ton treated of 8s. 11·205d. No additions of importance have been made to this plant during the year.

(2.) *Energetic Shaft.*—At the commencement of the period under review this shaft had been retimbered for a distance of 70 ft. The work of stripping, enlarging, and retimbering was carried on steadily up to surface, 362 ft., which was reached early in March last. The brace of the shaft was then raised 12 ft., an engine and boiler was installed, and head-gear erected for the purpose of sinking the shaft, which was done on wages until the connection with the Wealth of Nations battery level was made. The shaft was then let on contract, and at the end of the year had reached a depth of 415 ft. below the battery level, or 831 ft. in all from the surface. The shaft will probably reach the bottom level of the Wealth of Nations Mine about the middle of June. The new hoist is now on order from London.

(3.) *Golden Fleece.*—A considerable amount of development-work has been done in this mine during the year, principally on Nos. 11 and 12 levels, besides sinking the shaft between these two levels and making the necessary connections. Stoping has been carried on from the Royal tunnel down to No. 11 level, and a large amount of ground has been gone over to provide the tonnage crushed, the reef being very irregular throughout the mine, making it necessary to stope a considerable amount of blank ground to get at isolated patches of quartz. During the year 13,614 tons of quartz was crushed, yielding bullion to the value of £23,403 13s. 11d., besides producing sulphurets which were sold for £1,741 18s. 10d. At the cyanide-works 9,550 tons of coarse sands, representing 70 per cent. of the total crushed, together with 880 tons of tailings from the old Venus Mine, was cyanided, yielding bullion to the value of £4,744 12s. 7d. Of this amount, 2s. 3·716d. was absorbed in working-costs, leaving a profit of 6s. 9·460d. per ton. No alterations of importance have been made in the equipment during the period under review, and the machinery has done good work.

Progress Mines of New Zealand (Limited).—Very extensive developments have been made during the year, comprising 3,283 ft. of driving and crosscutting, and 795 ft. of rising and sinking, with the result that the ore-reserves of mill rock are practically the same as at the corresponding period last year, although 56,000 tons has been mined and milled. An enormous tonnage of low-grade rock has also been opened up, which, under present conditions, will not pay to extract. The principal developments have been carried on in Nos. 2, 5, 6, 8, 9, and 10 levels, whilst stoping has been conducted in a general manner throughout the mine from No. 2 level downwards. The shaft remains as before, the lowest level open being No. 10. At the end of the year the most interesting part of the mine was No. 6 level east, where a very fine ore-body 34 ft. from foot to hanging-wall, dipping at an angle of 30°, was recently cut through. This was being vigorously opened up by means of rock-drills, going both ways on it, besides putting up a rise to connect with a winze sunk from No. 5 level. On No. 9 level east developments have also been of great interest in proving a large tonnage of high-grade stone lying in a position closely resembling a coal-measure. No alterations of importance have been made in the equipment on surface at the mine, with the exception of the engine at the old shaft, which is in readiness to be transferred on to a new concrete foundation prepared for it. The output of the mine for the year amounted to 55,976 tons of quartz. This quartz was transported by the aerial tram, and reduced at the battery, yielding 21,123 oz. 8 dwt. 13 gr. of bullion by amalgamation, valued at £87,887 15s. 8d. 990 tons of concentrates was produced and treated, yielding 3,269 oz. 6 dwt. 13 gr. of bullion, of the value of £13,367 0s. 3d. At the cyanide plant 16,422 tons of sand has been treated during the year. For

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the first five months some of the accumulated tailings were treated, but during the latter seven months the sands treated have been exclusively from the battery. The yield from the cyanide-works is valued at £5,745 0s. 4d. The extraction at these works was equal to 6s. 11·961d. per ton; of this amount only 2s. 8·844d. per ton was absorbed in treatment charges, leaving a profit of 4s. 3·117d. per ton. The cyanide plant now consists of ten treatment-tanks, 25 ft. in diameter, and another is shortly to be built. The total working-cost (excluding capital and development expenditure and cyanide-works account) amounts to—working-costs, £46,838 18s. 2d., at 16s. 8·824d. per ton; profit, £54,415 17s. 8d., at 19s. 5·311d. per ton. Cyanide-works—working-costs, £2,247 7s 4d., at 2s. 8·844d. per ton; profit, £3,497 13s., at 4s. 3·117d. per ton: making total cost (excluding capital expenditure), £49,086 5s. 6d.; total value yield, £106,999 16s. 2d.; total profit, £57,913 10s. 8d.: which must be considered as a very satisfactory balance-sheet. The whole of the plant has been maintained in a thorough state of efficiency, the only new plant added during the year being an 18 ft. diameter tailings-wheel, and classifying arrangements to separate the sands from the slimes. A strong-room has been built into the solid rock in the battery-house for the reception of amalgam, &c. The canvas plant has been extended by the addition of twelve new tables, 10 ft. by 15 ft. long, all housed in. Since these tables started (last October) a large increase in the amount of slimes made is noticeable. The milling-time during the year 1902 was exceptionally good, seeing that the mill ran for the full theoretical time, with the exception of 10·98 days. This loss of time represents the total delays caused by the monthly clean-ups, daily scrapes, and incidental stoppages. We confidently look forward to a successful and prosperous year for 1903.

Welcome Gold-mining Company (Limited).—Early in the year a small cyanide plant, consisting of two 20 ft. diameter treatment-tanks 5 ft. deep, and one sump of the same dimensions, were erected to treat the tailings as they came from the battery. The battery started crushing again on the 12th February, and has continued to run steadily since, consuming the quartz as mined. By covering a lot of ground in the mine 1,781 tons of quartz was stoped, the average stoping-width being absurdly small. However, the stone produced was of good value, as the 1,776 tons crushed yielded bullion to the value of £3,492 19s. 8d., and the 1,324 tons of sands which was cyanided yielded bullion to the value of £1,109 17s. At the end of the year the stopes were looking very mean, and cannot be relied on to yield much more mill rock. The following figures show the costs incurred and profit won: Cost of working, £2,688 6s. 4d., at £1 10s. 3·29d. per ton milled; profit, £1,914 10s. 4d., at £1 1s. 6·71d. per ton milled.

New Inkerman Mines (Limited).—Mr. Norman Dudgeon, manager of the New Inkerman Mines, reports as follows: The following work has been carried out on this company's property for the twelve months ending the 31st December last: Driving on lode, 888 ft.; sinking on lode, 100 ft.; uprising on lode, 497 ft.; crosscutting, 541 ft.: the total footage being 2,026 ft. The reef driven on has varied in width from 3 ft. to 27 ft. 6 in. The tonnage of ore blocked out by this work approximates 20,000 tons, the value of which is very variable. Fifteen head of stamps in the old thirty-stamp mill are being put in order. Frue vanners are being installed, and a cyanide plant is being erected. Crushing will commence in April next. The average number of men employed during the period was twenty-four. The total expenditure on this property in development up to the end of 1902 was £57,044 16s.

Last Chance.—This private company has during the year 1902 been principally engaged in prospecting. 300 ft. of driving and 50 ft. of rising has been done, but very moderate success attained. 3 tons of ore, to the value of £24, was the extent of the yield for the year.

STATEMENT showing the RETURNS from the QUARTZ MINES in the REEFTON DISTRICT from the 1st April, 1880, to the 31st March, 1901, and for the Years ending 31st December, 1901, and 31st December, 1902.

Year ending 31st March.	Calls made.			Dividends declared.	Quartz crushed.	Yield of Gold.			Value of Yield.		
	£	s.	d.	£	Tons.	Oz.	dwt.	gr.	£	s.	d.
1881	10,218	17	6	19,650	25,926	17,597	14	10	68,630	13	10
1882	25,504	3	4	37,643	14,894	20,154	0	0	78,600	12	0
1883	64,345	0	0	32,600	18,928	19,194	0	0	74,856	12	0
1884	49,456	0	0	16,500	23,433	16,547	0	0	64,533	6	0
1885	29,333	0	0	34,100	34,349	23,997	0	0	93,588	6	0
1886	24,565	0	0	14,500	27,198	14,591	0	0	56,904	18	0
1887	21,596	0	0	33,450	23,930	21,143	0	0	83,171	15	5
1888	30,432	0	0	17,550	24,403	16,775	0	0	66,030	11	5
1889	38,919	0	0	16,688	28,564	18,663	0	0	72,720	18	0
1890	27,531	0	0	18,250	32,394	17,780	0	0	69,676	12	1
1891	20,404	0	0	27,325	39,643	23,347	0	0	91,998	8	10
1892	25,956	0	0	30,743	35,562	23,390	0	0	95,885	5	1
1893	18,800	0	0	16,900	37,693	20,171	0	0	80,894	5	1
1894	14,350	0	0	18,832	34,518	18,413	0	0	73,752	14	11
1895	10,153	0	0	11,012	26,602	13,426	10	0	53,509	5	1
1896	8,418	0	0	25,925	29,816	22,025	0	0	87,935	18	4
1897	9,033	6	8	4,900	13,270	8,365	4	20	33,824	7	1
1898	7,859	3	4	50	9,751	4,266	7	1	18,253	7	3
1899	5,920	6	8	900	42,305	21,487	18	15	87,587	1	0
1900	10,747	8	9	47,050	58,277	26,693	3	18	108,455	17	8
1901	5,826	9	7	35,300	82,618	33,979	5	5	134,557	7	11
Year ending 31st Dec., 1901	6,233	6	8	58,199	97,870	46,066	16	12	186,719	6	7
" 1902	6,900	0	0	63,974	98,485	46,561	9	9	188,655	2	5
Totals	472,501	2	6	582,041	860,429	494,634	9	18	1,970,742	12	0

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Dredging Claims.

A1 Gold-dredging Company (Limited).—This dredge worked with varied success during the year, and is now working towards the lower end of the claim, which has proved to be the richest part. The dredge has treated a large quantity of wash, but whilst working to the upper part the bottom rose so rapidly that it had to be turned and worked downwards again. The depth of the ground in the lower part is 25 ft., and in the upper 12 ft. There is good reason to believe that good returns will be obtained from the whole of the ground the dredge is now on, which should take three years to work out.

Reeves's Proprietary Gold-dredging Company (Limited). — Since starting in 1901 the dredge has worked about 10 acres of the claim (which is a freehold, and not an ordinary lease) of 600 acres. The past year showed an increase of over £1,000 in returns, and if the directors are successful in putting on another dredge shortly the returns will be increased materially.

Boatman's Creek Gold-dredging Company (Limited).—This claim is situate on Boatman's Creek, and between the A1 and the Reeves's Proprietary dredging claims. No actual mining operations were conducted during the past year, but a dredge is being built on the ground. The pontoons are not yet floated, but the planking is nearly completed and the machinery in course of delivery. The dredge is expected to be at work some time in May, 1903.

LYELL AND MURCHISON.

For the year ended 31st December a fair amount of interest has been displayed in dredging, and on the whole the results obtained may be said to be satisfactory.

During the year five dredges have been working on the Buller River between Lyell and Westport, and with perhaps one exception, they have all obtained highly payable returns, one of them (the Buller Junction) having obtained as much as 234 oz. for a week's work. A very considerable amount of time has been lost during the year from various causes, the too frequent breakages and consequent stoppage for repairs occasioning a serious loss of time.

The Feddersen Company's dredge, near Lyell, commenced operations at Christmas, and is already on gold.

On the Upper Buller the Fern Flat Proprietary, (Limited) have been working for some months with the old Buller dredge, which has been thoroughly overhauled and repaired, but the returns obtained have been rather disappointing.

On the Matakitaki there are two dredges working—viz., the Kohikohi and the Amikitea—but the returns obtained by both of these dredges have been very disappointing, being far below what was anticipated from the prospects obtained when the ground was taken up. In view of the poor returns from these two dredges a number of special claims and prospecting licenses have been surrendered. Nearer Murchison, however, Mr. George Walker, on behalf of a syndicate, has taken up a special claim of 68 acres, and has purchased a dredge to work the ground, which is said to be very good.

Alluvial.

Not much attention has been paid to sluicing during the past year. In the Murchison and Upper Matakitaki districts a few miners manage to make a living, but the number of men depending solely on mining for a livelihood is becoming gradually less.

On the Buller the individual miner has almost entirely disappeared, only a few Chinese being left.

At Newton Flat the Neville and Perkins Hydraulic Sluicing Company (Limited) have spent a large amount of money in bringing the Newton River on to their property, but the results obtained did not warrant the very large outlay, and the company is now in course of reconstruction.

Quartz.

Quartz-mining has been rather dull during the year.

The Alpine Extended Company have about thirty men working in their mine at Lyell, and are at present engaged sinking the main shaft, and when this work is completed a fresh lease of life for this mine is confidently looked forward to, as the company have proved the existence of a body of rich stone in the lowest level—a winze having been sunk on the stone for over 70 ft.

The only other mine that is being worked is the Tyrconnell, where a party of four men are working a leader close to the Alpine Company's ground, and have been doing very well during the year.

WESTPORT DISTRICT.

Addison's.

This is still the chief gold-producing field in the Westport district. The yield is gradually diminishing, however, as the richer leads are worked out. Want of water and of fall for tailings hamper operations considerably, and prevent small parties of men with limited capital from taking up claims.

Venture Cement Claim. — This company has been crushing steadily since the holders secured an increased supply of water, and they are now able to work the full strength of their ten-head battery.

Willikin and Party.—Sluicing operations have been vigorously carried on by this party, but latterly the wash has become so hard that they have been compelled to put it through their crushing-battery.

Mouat and Party.—The surface-stripping of this claim became so heavy that the party had to change their mode of work and resort to driving. They are bringing out and crushing cement of fair average quality.

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Carmody and Party.—After a long and uninterrupted period of successful sluicing the party had to take steps to secure more fall. They have been put to considerable expense through having to lower their washing-site, construct new tables and water-balance, and drive tunnels for tail-race, &c.

Virgin Flat Company. — This company has been reorganized, and has resumed operations after a spell of idleness. A water-balance has been erected during the year, and some prospecting-tunnels have also been driven.

Gould and Party.—A good deal of dead-work has been done at this claim during the past year. A new branch tail-race has been completed, and a paddock for washing tables, 66 ft. by 46 ft., has been cut out to a depth of 30 ft.; new water-balance and tables have been constructed, and a tunnel driven to connect the washing-site with the water-balance. They have now resumed sluicing, and results so far have been satisfactory.

Neil and Party.—In this claim also a large amount of preparatory work had to be done. For some time past sluicing has been resumed, and the party are supposed to be doing very well. In all probability they will now be able to sluice away the ground right to the end of their claim without being put to any serious expense for dead-work.

McCann and Party.—This party has now secured ample fall, and, having a good supply of water, they are putting through an enormous quantity of wash which, it is generally believed, carries good gold. They should therefore soon recoup themselves for the heavy outlay incurred in dead-work for some time past.

Addison's Long Tunnel Gold-mining Company. — The greater part of the past year has been taken up in moving and re-erecting the water-balance for lifting hopperings and in extending and boxing the tunnel tail-race, in order that the southern end of the claim can be worked. The south face, where previously worked, yielded substantial dividends, and shareholders therefore naturally look forward to having a good time again in the early future.

Mokihinui.

Red Queen Gold-mining Company (Limited). — This mine is again in operation. It was taken up early last year, and a company formed locally to resume work. The mine is now fully equipped for working in a small way. A two-head Hendy battery (850 lb. stamps), with a 6 ft. Pelton wheel, has been erected. Two level tramways and a wire-rope incline connect the battery with the upper workings, where a rich outcrop is exposed. Driving on the stone has proved rather disappointing so far, the gold being in patches and not in defined shoots. The reef is small, and should therefore be fairly rich to be profitably worked. The stone crushed last year yielded returns averaging 27 dwt. per ton.

Waimangaroa.

Britannia Gold-mining Company (Limited).—The principal operations at this mine consisted in prospecting. Another block of stone has been found between Nos. 3 and 4 levels, and the necessary connection for conveying stone to the battery is now being put in hand.

Stony Creek Gold-mining Company (Limited). — Quartz-crushing was carried on for about six months at this claim, and then unfortunately the reef pinched out. The returns were disappointing, and the directors decided to stop active operations. Monthly calls are now being made to meet liabilities incurred, and the directors intend shortly to do further prospecting-work, and hope to have the battery running again during the present year.

Island Creek Gold-dredging Company (Limited).—This company has gone into liquidation. The dredge and plant were sold to the Stony Creek Gold-mining Company, and removed to Ngakawau. The latter company were unsuccessful at Ngakawau, and recently sold the dredge and plant, evidently with the intention of discontinuing all further dredging operations.

Wareatea Gold-dredging Company (Limited). — This company, having been unsuccessful in their dredging operations, sold their plant to the Waimangaroa River Gold-dredging Company, and went into liquidation. The latter company had not commenced dredging at the end of last year.

Fairdown Gold-dredging Company (Limited).—This company, owing to want of success in adjoining claims, discontinued operations before completing the dredge, sold the plant, and went into liquidation.

Old Diggings.

Several small parties of miners are working on this field, but, so far as I can learn, few are doing more than making wages. The Wellington Company's claim is being worked on tribute. Hill and party are taking in a new tail-race, and expect to get better returns when it is finished.

Bradshaw's Terrace and Creek.

Several payable claims are being worked in this locality. Great difficulty is experienced at most of them in disposing of tailings owing to want of fall. The creek and lagoon are being gradually filled, and in the course of time there is no doubt sluicing will have to be abandoned for want of fall unless a large sludge-channel is constructed or some other method adopted for removing the tailings in a wholesale manner.

Ahaura District.

Beginning with the Moonlight Creek field, there is very little difference since last year. The population is about the same, and as no new ground has been opened there is no material difference in the number or class of claims. The completion of the Shetland Terrace Hydraulic Sluicing Company's water-race about April next will, it is expected, provide employment for a number of extra men. The water-race is being constructed from Fenton's Creek, and not, as at first intended,

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from Moonlight Creek. This will, however, enable the company to commence sluicing at Stewart's Terrace. The race, having been constructed along a steep side of a spur of the Paparoa Ranges and a considerable portion having to be tunnelled, has proved a very costly one, averaging about £15 per chain.

With regard to Blackball, the same general report as to population and claims as that of Moonlight will apply. About the same number of men are at work on Lingrew's Terrace, Lower Blackball, while Upper Blackball is much the same as last year. The large race at Montgomery Terrace has now been completed and sluicing commenced. The cost of bringing in this race, owing to the roughness of the ground traversed, has been much greater than was anticipated.

At No Town the population is slowly decreasing, and very few claims have been taken up during the year. However, the Atlas Gold-mining Company purpose constructing a water-race from Lake Hochstetter to the terrace above No Town, and should this be accomplished there should be a considerable increase in mining and a general revival in the district, as the difficulty up to the present has been the shortage of water to work the terraces. The No Town Creek dredge has proved a great success, and should lead to the construction of dredges for Bignell's No Town Gold-dredging Company and No. 2 Gold-dredging Company.

At Nelson Creek the population remains about the same, and the six dredges in the vicinity are all working with fair results. There are several parties carrying on sluicing operations, but the only new feature in this respect is the working of No. 3 Creek by water-balance by Donnellan and Sons.

At Ahaura also the population remains stationary. Active sluicing operations continue along the north bank of the Ahaura River, and fair results are obtained. The want of a constant supply of water is seriously felt. Orwell Creek is the only source of supply, and after three or four days the supply falls off, and one by one the sluicing parties have to close down until the next fall of rain. There is one dredge working on the river, and the work done goes to prove the river a good field for dredging with anything like a powerful dredge.

The same report as to population will also apply to Orwell Creek. The ordinary miners still continue sluicing when water is available, and a few are still engaged tunnelling on Napoleon Hill. There were two dredges on this creek, Erickson's Reward and Orwell Creek. The former is still working and getting payable returns, but the latter, which was built as an experiment to work 70 ft. or 80 ft. in depth, did not prove a success, and has closed down.

At Totara Flat, Half-ounce, Noble's, and Waipuna things are much the same as last year. The dredges at work then are, however, closed down. The Grey River Consolidated has been sold, but there is every likelihood of the Totara Flat starting again. The Great Lead-Kapai dredge at Waipuna is still lying idle. On Mosquito Creek the one dredge working is getting rich returns, and it is expected that the No. 2 will soon be completed and starting work. Another dredge nearing completion is the Sullivan's Lead, on a tributary of Duffer's Creek. The Golden United Gold-dredging Company have purchased a dredge in Otago, which is to be shifted and re-erected on Duffer's Creek itself, and is expected to get rich returns.

At Blackwater the prospects are very bright. The population is much the same, but the two dredges on the creek are getting payable returns. The ground at Snowy River is being systematically prospected, and gives promise of a fair return.

With regard to quartz-mining on the Paparoa Ranges, the outlook is very promising. The Garden Gully Company have struck a reef, from which payable gold has been obtained, and they are now pushing on the development of their property. Should this prove the reef continuous and payable it should cause a large area of land to be prospected and worked. The Taffy Gold-mining Company let their property on tribute to Falconer and party, so that little information can be obtained. The party have, however, been continuously at work, and are apparently satisfied, as they have taken out licenses over the adjoining areas. The Crœsus Company have also kept men at work on their holding, and have driven a low-level tunnel of about 1,000 ft. This is reported to have been successful, as the reef was struck, but has not up to the present been tested. It is, however, clean and solid, and gives every promise of turning out well. The very thorough working of these three claims should be the means of clearly proving whether payable ore can be got on these ranges. Should it prove successful in establishing this fact a large and important field would probably be opened up.

Greymouth District.

The companies which were engaged in dredging operations on the Grey River, near Brunnerton, have both gone into liquidation. The Grey River Company's dredge, which cost upwards of £7,000, has been sold by auction for £675, and the purchasers are arranging to alter the dredge and set it to work on Jones's Flat, which adjoins the company's river claim, and is immediately alongside the place where the company's dredge obtained about two thousand pounds' worth of gold in a few weeks some two years back. There is a possibility that this gold was part of a lead which is supposed to run through the flat, and the new owners of the dredge regard their enterprise as a reasonable mining venture, which will only incur a moderate outlay, and may possibly yield large profits on the small capital involved.

The Grey River Extended Company's dredge, which was working west of Brunnerton, was acquired by a private syndicate for £750, and the new owners are continuing to work the ground which proved unprofitable to the company, but which may possibly pay well enough on the small capital of the syndicate.

On the New River the Cornwall Company's dredge is working with sufficient profit to cover working-cost and leave a small margin; but both Marsden No. 1 and the New River Companies have gone into liquidation, and a proposal is now about to be accepted under which the New River

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Company's dredge is to be removed to a beach claim known as the "Golconda," near Cameron's, and suitable portions of the Marsden No. 1 dredge will be used to replace defective and worn-out parts of the New River dredge. The Golconda Claim has been well prospected, and there is a reasonable probability that this venture will redeem at least a considerable portion of the capital which the companies mentioned have lost.

At Dunganville, Maori Creek, a dredge is being worked by the Maori King Company, and there is now some promise that this company's operations will be attended with a measure of success. Recent returns have been as high as 40 oz. a week, and taken over a considerable period the average has shown a profit. Having regard for the richness of this locality, it is quite probable that the dredge will obtain very high returns if the lead, which runs across Maori Creek, can be picked up by this dredge. It is to be regretted that the machine is too weak and defective for the heavy ground on which it is employed. Constant breakages are occurring, and the profits which would otherwise accrue are largely disturbed through such mishaps. This dredge was formerly the property of a Wanganui company known as the "Maori Queen," but the company was involved in financial difficulties when it started dredging, and the defective nature of the plant added to the company's troubles and caused its failure. The dredge was bought at auction by the Maori King Company for £1,200, and, after making a few additions to the machine and strengthening the weak parts, this company continued to dredge where the old company left off, and, as stated above, there is evidence that the Maori Queen Company might have survived its financial troubles if it had persevered with its work.

The Marsden No. 3 Company partially constructed its dredge to work a claim on the New River, near the Marsden Township, but the company has gone into liquidation and the machinery has been sold for removal.

Dealing with the four companies which are engaged in dredging the marine deposits along the fringe of the Tasman Sea, the only company that has been successful in its operations is the North Beach Company. The company's dredge has been winning profitable returns consistently throughout the year, and the weekly average has been approximately 40 oz. The debt with which the company was encumbered has been cleared, and substantial and useful alterations have been effected on the dredge by substituting cast steel for iron in parts which were found to wear badly through the grinding of the sand; besides this the company has paid 4s. in dividends, equal to 20 per cent. of its capital.

The Leviathan Company, which is engaged in dredging a beach claim a few miles south of Greymouth and some six miles away from the North Beach, has had an unprofitable career, and the outlook is not good. The company raised £3,000 by the issue of preference shares to enable it to tide over financial difficulties, and half this amount was speedily refunded in preference dividends; but poor ground was then encountered, and lately the dredge has barely covered its working-cost.

The Leviathan Freehold Company placed a useful and powerful dredge on a claim comprising about 200 acres of ground south of the Leviathan Company's claim, but the results have been unprofitable, and it is fairly certain that the company will be forced to liquidate and sell the dredge.

The Stony and Mosquito Lead Company are operating on a beach claim on the north side of the Leviathan Company's ground, and occasional returns have been secured which suggest that the average yield would be satisfactory if the machine was capable of dealing with the ground in an efficient manner. Frequent breakages have, however, disturbed continuous work, and the dredge is not sufficiently strong to cope with the lower wash, which is very tight and does not yield readily to the buckets.

The No Town Creek Company's claim is registered as being in this district, though it really forms part of the Ahaura division. This dredge has been working to profitable advantage from the time the machine was started, and during the year the company has cleared a substantial debt and has paid 5s. per share in dividends, equal to 25 per cent. of the total capital. The machinery has occasioned a good deal of trouble through wearing badly, but gradually the defects have been overcome, and it is likely that the company will now work to better advantage than formerly, and afford profitable returns to the shareholders for several years. Anyhow, the immediate prospects are very satisfactory.

The general want of success of the river-dredging may be attributed to various causes. A valued correspondent favours me with the following remarks: The frequent stoppage of work caused by the flooding of the river has to some extent been conducive to the failure, for it is evident that a dredge working in an intermittent manner requires richer returns when working than a dredge which is not interrupted so frequently; but, apart from the disturbance of work, the fact remains that the auriferous dirt in the rivers is more patchy than it is in the tributary creeks and on the ocean-beaches, and though the persons who have bought the companies' dredges at low prices may make good profits on the small capital now involved, it is clear that the original outlay was ill-advised.

Auriferous Marine Deposits.

Whether any substantial success can be achieved by dredging these deposits remains to be proven. The operations of the North Beach Company's dredge serve to show that, given reasonable advantage in locality and general conditions, the work can be undertaken with considerable profit on a capital of about £9,000, but against this success it has to be remembered that three other companies have either failed or partially failed up to the present. These gold-deposits consequent upon marine action occur in places stretching over some hundreds of miles along the coast-line, and I have little doubt that considerable attention will be directed to the possibilities of dredging the best of these patches in the near future. In some places the locality is against the

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chance of machinery being landed at reasonable cost even where rich ground can be proved to exist, and this is a factor which will hamper the progress of the industry to a considerable extent; but it has been made manifest that black sand when mixed with a reasonable proportion of beach shingle can be dealt with in bulk by a bucket dredge of the ordinary type in a successful manner, and I am of opinion that where sufficient area is available to afford a dredge, say, ten years' work, and it is proven that there is a reasonable proportion of gold existing, the beach claims will prove more profitable on the whole than the claims situated in creeks and watercourses, where work is liable to more frequent disturbance, and where the gold-deposits appear to be more patchy.

Dredging.

Table A (appended) gives the same information as Table A given in my report for last year, and enables a comparison to be drawn of the grants and expiry of prospecting licenses, and the grants and surrenders of special claims, whether reefing, dredging, or sluicing areas. The prospecting licenses which were reduced in number in 1901–2 by 441, and the areas granted by 31,996 acres, were in the year 1902–3 further reduced in number by ninety-four, and in area by 6,883 acres. The special dredging claims, which showed a balance in 1901–2 in numbers of grants over surrenders of sixty-one, and of areas of 4,920 acres, in 1902–3 showed an excess of surrenders over grants in number of fifty-two, and in area of 4,758 acres. The sluicing and dredging surrenders and new grants do not show so marked a difference, but both show a decline in number and area.

I think it is clearly shown by the tables of this and last year that the industry has now entirely lost the impetus of the "boom," and is almost reduced to normal conditions.

Table B (appended) is also in the same form as Table B of my report of 1901–2. From this table it will be seen that there are thirty-four companies *in esse*, and seven in course of liquidation. The total capital in shares is £408,120, of which £338,120 is the share capital of companies *in esse*, and £70,000 of the companies in liquidation. Besides the £338,120 share capital, the thirty-four companies *in esse* have a debenture debt of £24,094 18s. 7d. Of all the thirty-four dredges *in esse*, only ten have paid dividends; and in these ten there is a large inequality of returns.

The Nelson Creek dredge stands at the head of the dividend-payers, the percentage of dividends to capital being 115 per cent. No Town Creek stands next with 25 per cent., and North Beach with 20 per cent. The remaining eight dividend-paying dredges taken together paid 6·42 per cent.

It must be observed that the directors of the Pactolus, instead of paying dividends, invested the profits in equipping a second dredge, a course which up to the 31st December last does not appear to have been profitable. But I have no figures as to the net earnings so invested.

The total amount of gold got during the year was 23,579 oz., which, taken at £3 19s. per ounce, gives £93,137, which would show a percentage of gold won to the total share capital of all the dredges *in esse* and being wound up of slightly over 22 per cent.

Turning to the non-dividend-paying dredges, we find that the percentage of gold won equals a little over 21 per cent. on their total share capital, and that the whole of that gold won has gone in expenses of some kind or another. This result is curious proof of the reasonableness of the estimate given in my report last year—that it would take £80,600 to pay the working and general expenses of thirty-one dredges. The twenty-four non-dividend-paying dredges alone expended £69,000, and if we take the expenses of the ten dividend-paying dredges at £2,600 each—as estimated in my last report—then the thirty-four dredges must have expended in working and maintenance £95,000, or an average of £2,500 per dredge—a difference of only £100 a year per dredge between the estimate and working result.

It cannot be said that the results given by these tables are satisfactory, or that there is much ground for encouragement. There are so many elements of uncertainty involved in the problem of profitable dredging that it is most difficult to regard the enterprise otherwise than as speculative in a very high degree—at least, as worked under present conditions. No doubt the money spent has benefited a large number of persons—manufacturers, carriers, storekeepers, artisans, and labouring-men; but the shareholders do not intentionally invest their money on altruistic principles, and the result to them cannot be anything but disastrous.

The Alleged Oil-deposits at Kotuku.

Messrs. Ormond, Cooper, and McLean hold 600 to 700 acres of the supposed oil lands at Kotuku on prospecting licenses, and have applied for mineral licenses covering 626 acres. They have also a right to bore on the Education Endowment Reserve 131, containing 1,000 acres, and over two freehold sections containing 197 acres. They have had an experienced man engaged with labour in boring for several months, and found oil, but, as far as is at present known, not in quantities to justify any expectations of a payable field.

Messrs. Wickes, Mortensen, and Dentella have taken up 539 acres on prospecting license, and have provided plant, but as yet have not actually done any boring.

Mr. Roberts has a prospecting license over 900 acres.

The total of all these areas taken up is 3,939 acres.

When the Harbour Board were boring for coal at Dobson they came across small quantities of oil. But the last bore went down 2,000 ft., and there was no sign of such an oilfield as those in the United States, in Baku, and in Burmah, which furnish the world with petroleum. Nor, having regard to the New Plymouth experiences and the general broken character of New Zealand strata, would it be wise to indulge in any sanguine expectations with regard to Kotuku.

The Timber Industry.

The exports of timber and railway-sleepers from the Port of Greymouth are as follows:—

Timber: 16,154,556 ft.; value, £56,540 19s. Sleepers: Number of pieces, 127,873, equal to 2,983,703 ft.; value, £20,779 7s. 3d. Total, 19,138,259 ft.; value, £77,320 6s. 3d.

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COAL.

The export of coal for the year from Greymouth was as follows: Blackball Mine, 99,597 tons 6 cwt.; Brunner Mine, 116,714 tons: total, 216,311 tons 6 cwt.

The working of coal at Reefton is confined almost entirely to local demand for household purposes and for the mines and dredges. An attempt was made by agents at Greymouth to obtain this coal, but the supply was so intermittent and the carriage charges so heavy that they have, I think, all abandoned it.

It is said that there is coal at Coal Creek of equal value for household purposes with that of Reefton; and, if so, the Reefton coal will not be able to compete for the market.

GENERAL.

The number of suits disposed of in the Warden's Court, Greymouth, for the year ending the 31st December, 1902, was thirty-four.

The revenue for the year amounted to £5,566 12s. 1d., the particulars of which are as follows: Miners' rights, £160 5s.; rents, £2,563 9s.; water licenses, £2 5s.; miscellaneous, £2,775 8s. 7d.; fees and fines, £65 4s. 6d: total, £5,566 12s. 1d.

Comparison between the Rand (South Africa) and New Zealand.

It is not, I think, out of place or without interest in this report to compare the expenses of working a Reefton mine, where none but well-paid white labour is employed, with the expenses of working mines on the Rand, where all the common labour-work of the mine is done by African natives on a low scale of pay. The possibility of substituting white labour for native labour is one of the highest importance to the Empire, including this colony. It has been repeatedly asserted that the ore on the Rand is of too low a grade to allow of the employment of white labour except in the upper departments, such as those of foreman, supervisors, and "bosses" of native labour, and the performance of work requiring skill, intelligence, and experience.

There is some information as to grades of ore and dividends paid by the Rand mines given in a report made by the engineers of those mines to the Right Hon. Mr. Chamberlain, and from which copious extracts appear in the London *Times* of the 9th February last. The information is, it is true, insufficient for an exact or comprehensive comparison. There are only two items where we are able to touch, but these are crucial. One is the average yield per ton of the groups of Rand mines, and the other is the dividends declared at per ton of ore raised. I give the two items of the Rand, and the corresponding items of the Progress Mines of New Zealand, taken from the report of 1901, the only one that I have at my disposal.

Rand Mines.—Thirteen companies; yield per ton, £1 5s.; only one of the thirteen paid any dividend. Thirteen companies; yield per ton, £1 10s.; dividend, 9·1d. Twelve companies; yield per ton, £1 15s. and over; dividend, 7s. 10½d. Eleven companies; yield per ton, over £2; dividend, 7s. 6·1d. Nineteen companies; yield per ton, over £2 5s.; dividend, 11s. 2·5d. Twelve companies; yield per ton, over £2 10s.; dividend, £1 7s. 10d.

Progress Mines.—The report of the Progress mines for 1901 gives the following figures: Total value of gold won, £93,474; total working-cost, 16s. 6·157d. per ton; profit, 17s. 4·201d. per ton: total, £1 13s. 10·358d. per ton. Dividends paid, 9s. 11d. per ton.

For the year 1902 the figures for the Progress mines were as follows: 55,976 tons milled; value, £101,254 15s. 10d. Value of yield per ton, £1 16s. 2·135d. Dividend per ton, 12s. 3·385d. 16,422 tons cyanided; value, £5,745 0s. 4d.; value of yield per ton, 6s. 11·96d. per ton.

It is necessary to give the milling account separate from the cyanide, because the tailings cyanided were not the proceeds of the year's milling, but included an accumulation of tailings from a long date back.

The following are the figures for the year 1902 of the Consolidated mines—the Wealth of Nations and Golden Fleece. The dividend paid in this case would be no guide, since the company derive the greater part of their income from sources outside the mines. I therefore give working-expenses and profit, the working-expenses covering every outgoing in the colony, leaving only "London expenses" and "writing-off" to be deducted.

Consolidated.—25,180 tons milled; value, £40,971 15s. 3d. Value of yield per ton, £1 12s. 6·517d. from actual milling. Total value of yield of 25,180 tons (including yield of concentrates and cyanide), £53,052 4s. 11d. Working-cost per ton, £1 2s. 4·766d.; profit, 19s. 8·894d.: total value, £2 2s. 1·66d.

I have confined the comparison to these mines in Reefton because, from the extent of the capital and completeness of plant and organization, they stand the most nearly to the Rand mines.

From the mining report of 1901 I take the following as to the largest mine in the Auckland Province:—

Waihi Mine.—159,325 tons treated; value, £431,601 0s. 8d. Value per ton, £2 14s. 2·144d. £165,000 paid in dividends, equal to £1 0s. 8·547d. per ton.

To compare the Rand tables with the New Zealand mines given above, we have the following results:—

Rand.—Yield of twelve companies, £1 15s. per ton and over; dividend, 7s. 10d. per ton. Yield of eleven companies, £2 per ton and over; dividend, 7s. 6d. per ton. Yield of twelve companies, over £2 10s. per ton; dividend, £1 7s. 10d. per ton.

Progress.—1901: Yield per ton, £1 13s 10d.; dividend, 9s. 11d. per ton. 1902: Yield per ton, £1 16s. 2d.; dividend, 12s. 3d. per ton.

Consolidated.—1902: Value of yield per ton, £2 2s. 1d.; profit, as stated above, 19s. 8d. per ton.

Waihi.—1901: Value of yield per ton, £2 14s. 2d.; dividend, £1 0s. 8d. per ton.

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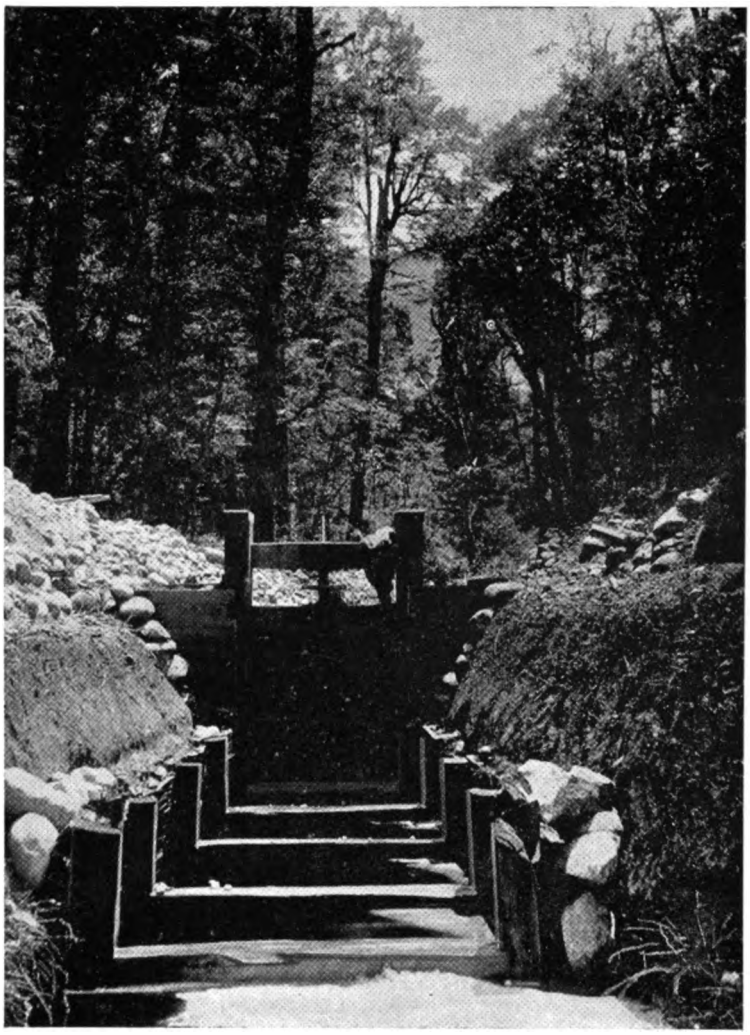
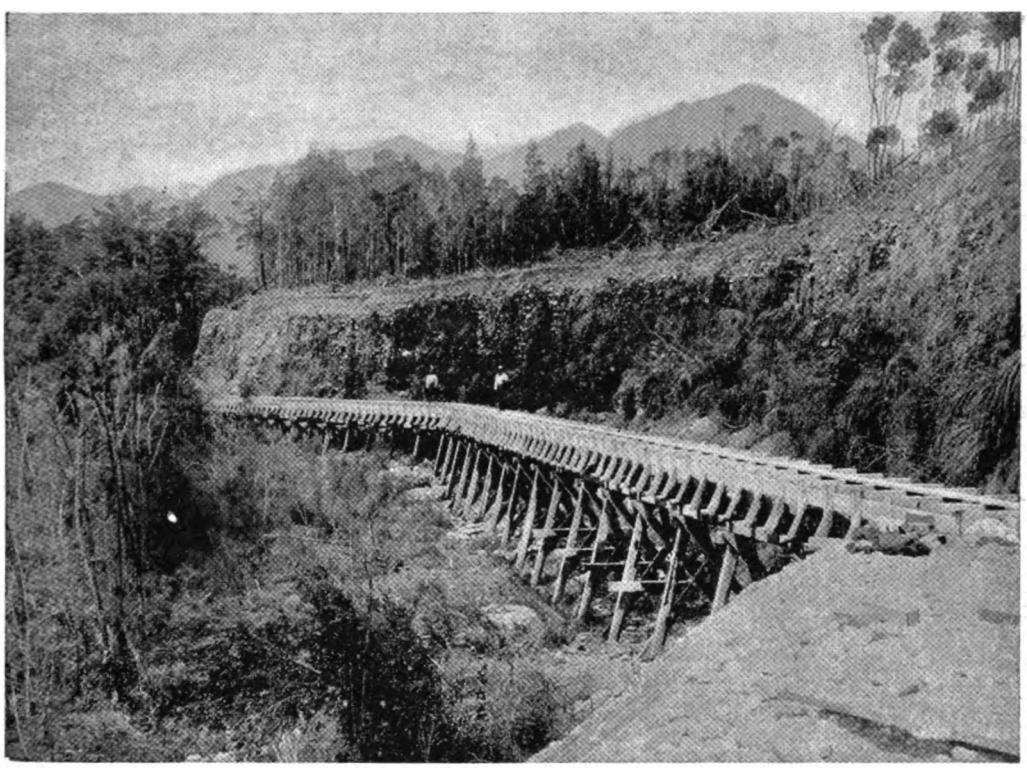


Gate of Intake of Progress Water-race.



Face p. 158.] Progress Water-race: Flume on Top Section.

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Though the profit per ton only is shown on the Consolidated mines, it must be clear that, since only "London expenses" and "writing-off" have to come off, the actual amount available for dividends can hardly be less than 12s.

It would furnish a better basis of comparison if working-expenses and profits were given in all cases instead of dividends, since dividends are arbitrary, depending not solely on net profits of working, but on the decision of the directors, based on prudential or other reasons and on the amount of capital on which the dividend has to be paid.

The Waihi Mine, it will be observed, which is in the same grade of ore as the highest-paying group of the Rand Mines, pays a less dividend by 7s. 2d. than that group. The difference may be largely, if not wholly, accounted for by the facts that the gold in the Waihi is mixed not only with silver, but with other matter, which makes it necessary to put the entire stuff through the cyanide process. Out of 112,012 tons treated in 1901, 95,829 tons were dry-crushed. Timber and coal are expensive, having to be brought from long distances.

There are two other points which have been alleged as grounds of difference between the Rand and the American and Australasian mines—one, that the width of ore-bodies is very great in the latter, ranging from 400 ft. to 20 ft., whereas the average width of the Rand reefs is only 4 ft. The second is that the latter mines are worked at less depth—the Rand mines ranging from 500 ft. to 2,500 ft. in the shafts. Neither of these objections apply to the Progress and Consolidated mines. In these the shafts go 1,000 ft. and 1,250 ft., and in the Progress the normal width is 5 ft. with occasional bulges to 30 ft., while the Consolidated mines do not average 5 ft., in one mine being only 26 in. The irregular nature of the reefs in these mines and their broken character, so characteristic of the country, make the working of them unusually expensive.

On the other hand, timber is obtained close to the Reefton mines. In the case of the Progress Mine it costs 10·81d. per ton milled. As all timber for the Rand mines is imported from abroad, it must stand those mines at a much higher figure.

The magnitude and importance of the difference in cost of labour—viz., native labour on the Rand 2s. per day, and white labour in New Zealand, miners 9s. 6d., truckers 8s., shaft and winze sinking 10s. per shift—is shown by the following extract from the progress report of 1901. The wages in the Progress Mine work out as follows: Mining, 9s. 4·333d. per ton milled; transportation, 3·983d. per ton milled; milling and concentration, 1s. 6·649d. per ton milled; chlorination, 4·774d. per ton milled; assay, 1·303d. per ton milled: total, 11s. 9·042d. per ton milled: leaving only 4s. 9·115d. for timber, fuel, explosives, maintenance, and all other outgoings whatever.

Is it possible that over-capitalisation and the difference in value of work done by the individual native and the individual white labourer are responsible for the difference of result?

There may be other factors as to which the *Times'* extracts from the Rand Mines Engineer's report are silent. But it is fair to assume that the most important features are given, and certainly the grades of ore and the rates of wages must be almost crucial. There is a reference in the Rand Engineer's report to trades-unions which suggests the idea that the employment of white labour will inevitably induce the formation of unions. From other remarks it appears that the writers of the report do not so much dread the regulation by the unions of rates of pay as their interference with the actual work of the labourers, with the management and control, and with the employment and dismissal of men, and the constant intervention of the officers of the union between the employer and the employed.

It is important, therefore, to note that the Progress and other Reefton mines are worked under trades-union rules, and that they have been so worked for some years without any serious trouble.

It is, of course, necessary to remember that under present conditions 8s., and even 10s., a day would be insufficient wages for a white man on the Rand.

The engineers of the Rand in their report put the cost of housing and living of a white man, his wife and three children, at £24 10s. a month. But that is purely a temporary difficulty.

The admirable administration of all departments by Lord Milner in the Transvaal and Sir Hamilton Goold Adams in the Orange Colony is already becoming felt. The railway conferences, held not only as to rates with Natal, Delagoa Bay, and the Cape, but as to construction of new lines in the two new colonies, must lead to a very large reduction of expense of transport. The sum of £5,000,000 is at once to be spent on grain railways and coal railways, connecting the Rand with the rich agricultural districts of the Orange Colony, and the coal and mineral districts of the Transvaal and Natal.

The resources of the almost boundless areas of fine cultivable lands in the two colonies will rapidly be developed under the settlement laws. Johannesburg, unlike our mining districts, has within easy distance lands of the richest quality which are being settled in small areas of 20 acres to 40 acres, with a view to supply all those market necessaries in the way of fruit and vegetables and fodder necessary to a larger city. Access by electric trams to wide and unlimited residential areas in proximity to the city will soon be effected, and with taxation based only on necessities of providing for the cost of government, as against the heavy protective taxation of the Australasian Colonies, it is conceivable that in a few years the white labourer will find himself in a position of the greatest ease and comfort on such wages as are now paid in these colonies.

It is manifest that the working of South African mines with black labour cannot be a matter settled for the future. All present arrangements must be temporary

In view of the constantly increasing facilities for labour to transport itself to the best market, it may be fairly held that the above review of the question is one which deserves the attention of both capital and labour.

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A.—Number of Prospecting Licenses and Special Claims granted and expired or surrendered during 1902.

	Prospecting Areas expired during Year ended 31st December, 1902.		Prospecting Areas granted during Year ended 31st December, 1902.		Special Claims surrendered during Year ended 31st December, 1902.						Special Claims granted during Year ended 31st December, 1902.					
					Dredging.		Sluicing.		Reefing.		Dredging.		Sluicing.		Reefing.	
	No.	Area.	No.	Area.	No.	Area.	No.	Area.	No.	Area.	No.	Area.	No.	Area.	No.	Area.
		Acres.		Acres.		Acres.		Acres.		Acres.		Acres.		Acres.		Acres.
Greymouth ...	53	4,050	48	4,143	29	2,064	9	266	...	...	2	82	..	..	..	..
Ahaura ...	109	7,929	32	1,962	32	2,512	14	203	1	96	6	347	10	202	...	...
Reefton ...	25	1,972	24	1,403	5	190	...	...	8	346	1	83	2	16	4	87
Westport ...	10	815	5	191	10	508	7	416	4	157	3	81	6	392	4	148
Lyell Murchison	25	1,528	15	1,205	14	804	2	104	1	16	26	727	1	20	3	42
Charleston ...	...	...	1	50	...	...	...	...	...	...	...	...	1	11	1	14
	222	16,294	125	8,954	90	6,078	32	989	14	615	38	1,320	20	641	12	291

B.—List of Companies having Dredges actually at Work on their Claims on the 31st December, 1902.

Name of Gold-dredging Company.	Present Capital of Company on which Dividends payable.	Borrowed on Debenture, Overdraft, or otherwise.	Location of Dredge.	Date of Completion of Dredge.	No. of Hours worked from 1st January to 31st December, 1902	No. of Ounces of Gold won from 1st January to 31st December, 1902.	Amount paid or declared in Dividends to Shareholders.
	£	£				Oz. dwt. gr.	£ s. d.
Welcome	9,900	..	Buller River ..	Dec., 1901	..	1,051 15 2	..
Ahaura-Watterson's ..	3,000	3,000	Ahaura River ..	..	476	116 3 6	..
Garibaldi*	8,500	..	Moonlight Creek ..	..	1,910	184 15 0	..
Erickson's Reward ..	9,255	440	Orwell Creek ..	..	3,850	945 6 17	..
Red Jack's	9,000	1,500	Red Jack's Creek ..	..	..	853 5 7	..
Trafalgar	9,000	1,750	Nelson Creek ..	..	2,962	390 14 21	..
Pactolus†	9,375	..	" .	..	6,907	2,386 10 12	..
Mosquito	10,000	..	Mosquito Creek ..	..	4,140	1,381 8 10	..
Aldinga	9,000	2,000	Nelson Creek ..	..	2,375	309 10 10	..
Victory	9,000	1,250	" ..	..	3,169	342 14 5	..
Blackwater River ..	9,475	..	Blackwater River ..	..	..	..	..
No Town Creek ..	12,000	..	No Town Creek ..	..	4,998	1,971 6 14	2,400 0 0
Callaghan's Creek ..	7,500	1,875	Callaghan's Creek ..	..	4,038	764 15 12	312 10 0
Great Lead‡	7,500	(220) (334)	Grey River.. ..	..	..	..	..
Nelson Creek	8,500	..	Nelson Creek ..	..	5,333	4,130 4 8	9,775 0 0
Greymouth Lagoons (No Liability)	17,740	1,235	Blackwater River ..	..	1,741	90 14 11	..
Cornwall	10,925	1,500	New River, Marsden	Jan. 24, 1902	4,642	661 13 7	..
Maori King	5,785	200	Maori Creek ..	May 22, "	234	46 15 12	..
Stony and Mosquito Leads	11,375	..	South Beach, Greymouth	Sept. 4, "	2,000	160 0 0	..
Leviathan Freeholds ..	15,000	1,500	Paroa	Aug. 6, "	1,920	158 11 4	..
A1	8,500	..	Redman's Creek, Reefton	June 1, 1901	4,921	968 8 0	850 0 0
Reeves's Proprietary ..	12,200	..	Boatman's Creek ..	Nov., "	4,765	931 1 6	610 0 0
Buller Junction ..	9,375	..	Buller River ..	Jan. 28, "	4,985	1,205 16 12	625 0 0
Fedderson's	11,000	..	" ..	Dec. 28, 1902	..	..	..
Mokoia	9,000	..	" ..	Oct. 13, 1900	500	139 16 0	..
Maori Gully	8,900	1,875	Stillwater Creek ..	Dec. 7, 1901	2,800	189 7 3	..
Grey River	8,500	235	Grey River.. ..	Sept. 1, 1900	700	82 3 0	..
Premier (Buller) ..	10,375	..	Buller River ..	Dec. 4, 1901	2,953	843 0 0	262 9 10
Leviathan	15,000	..	Paroa	..	..	1,293 0 21	1,500 0 0§
North Beach	8,325	..	North Beach, Greymouth	..	..	1,486 7 17	416 15 0
Shellback	8,615	..	Shellback Creek ..	April, 1902	3,259	414 19 2	..
Waimangaroa River ..	12,000	547	Near Westport ..	Oct. 17, "	140	4 5 0	..
Kohikohi	12,000	2,034	Matakitaki River ..	Sept. 3, 1901	180	34 6 0	..
Amikitea	12,500	2,599	" ..	Nov. 20, 1902	223	30 5 0	..
In liquidation—							
Grey River Consolidated	10,000	..	Grey River.. ..	..	..	..	..
Ruby Creek	10,000	..	"	..	..	..	..
Ford's Creek	6,500	..	Ford's Creek ..	..	..	..	..
Stony Creek	12,000	..	Near Westport ..	..	..	..	..
Orwell Creek.. ..	12,000	..	Orwell Creek ..	..	..	..	..
Totara Flat	10,000	..	Totara Flat ..	..	..	..	..
Kangaroo Creek ..	9,500	..	Kangaroo Creek ..	..	..	..	..
	408,120	24,094	..	..	76,121	23,569 0 3	16,751 14 10

* New company formed. † Two dredges working. ‡ Dredge closed down for last twelve months. Unable to carry on for want of funds. § 2s. 6d. on preference shares.

I have, &c.,
R. S. Hawkins, Warden.

The Under-Secretary, Mines Department, Wellington.

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Mr. Warden MACFARLANE to the UNDER-SECRETARY for MINES, Wellington.

SIR,— Westland Mining District, Hokitika, 18th April, 1903.

I have the honour to forward herewith the mining statistical returns, together with my annual report on mining matters generally in the district under my charge.

In reviewing the year's mining-work in my district a short synopsis of the more salient points of improvement will, when taken in connection with my last year's report, suffice to give a fairly clear idea of the progress made and the position attained, without recapitulating much that is set out in my last year's report.

ALLUVIAL MINING.

Throughout this district alluvial mining maintains about the same number of men, and the output of gold is practically the same, but, with the exception of the Mont d'Or, none of the larger companies have reached the dividend-paying stage.

I furnish herewith a report on Humphrey's Hydraulic Sluicing Company (Limited), kindly supplied by Mr. Spencer, the company's manager: "I herewith submit my report on the work conducted by this company during the year 1902. Water-race: On the whole, the water-race has stood well, supplying the regular water with which to work the claim. There have been several breaks during the year, but this is not surprising when it is remembered that the race is about seventeen miles long, passing through some very rough country. The supply of water has enabled sluicing to be carried on steadily, with a delay of approximately three days per month on the average. Sluicing: On the No. 1 face (on the eastern side of Humphrey's Gully) a very large quantity of gravel has been removed during the year, amounting to 442,700 cubic yards. Most of this was sluiced from the far end and middle of the face, where the wash was of more promising appearance. The yield of gold from this face was 614 oz. 13 dwt., equal to 0·666 gr. per yard. Of this amount, 108 oz. 8 dwt. 6 gr. of gold, representing 17·635 per cent., was caught on the tables. The decreased percentage obtained from the tables is due, presumably, to the greater length of boxes above the tables (amounting to about 10 chains), affording a better opportunity for the gold to settle. On the No. 2 face (on the western side of Humphrey's Gully) a very large amount of work has been done towards opening up the gravel, and, at the end of 1902, 111,700 cubic yards had been removed. Of this quantity, however, a large amount had to be sluiced through a very short length of boxes, as it was only possible to put on a box at the head or tail as room was made for it; hence the gold-yield so far obtained from this face cannot be taken as a guide to the actual gold-contents of the gravel. As soon as a sufficient area was opened up to receive the gold-saving tables the construction was put in hand, and the tables started to work at the end of August. Since then, of the 78 oz. 19 dwt. 23 gr. so far obtained from the face 33 oz. 19 dwt., representing 42·97 per cent. of the total yield, was retained on the tables. The equipment at this face is very similar to that erected on the No. 1 face during the year 1901, but a greater spread of tables has been provided on the No. 2 face, the gold-saving area amounting to 2,048 square feet. A hoist has also been installed for the removal of trees, stumps, &c., without which it would be impossible to work the ground. This face is supplied with light by Jardus arc lamps, the current for which is generated by the dynamo on No. 1 face. Output: The total gold obtained from the claim during the period under review amounts to 693 oz. 12 dwt. 23 gr., valued at £2,705 4s. Expenditure: The total expenditure during the year amounts to £4,439 19s. 9d. Of this amount, £2,395 18s. 11d. represents the actual revenue expenditure for wages and stores on claim and water-race. Rents, taxes, travelling-expenses, and accident insurance amount to £581 8s. 4d.; whilst on capital account £1,439 17s. 6d. was expended in plant and wages, and on stores on race and claim."

A large expenditure had to be incurred to bring water on to this company's claim, and up to date working-expenses have been very heavy. An important feature in the working of this claim is that of extensive gold-saving tables for saving the fine gold. The wisdom of such departure from old-fashioned methods should be an object-lesson to similar companies; but diggers are a very conservative race, and, with the exception of this company, they still adhere to their old methods, thus throwing into the tailing-dump gold that might pay the working-expenses of the claim.

I regret to say that there has been no new development of material value during the year, and if the same number of men are to be maintained it is absolutely necessary that more systematic prospecting in the back country take the place of the abortive attempts being made under the auspices of the Mining Association.

Quartz-mining is a negative quantity, although many miners hold the opinion that in the fastnesses of the Southern Alps rich deposits will yet be found.

SEA-BEACHES.

All black-sand beaches are at present commanding considerable attention. From the Montezuma beaches, north of Hokitika, to Bruce Bay claims are being applied for, and dredges ordered to work same. The prospects obtained warrant the erecting of dredges specially designed to deal with black sand, and should be in full working-order under three months. The prospects, I am informed, that are now being obtained on the Mikonui Beach are of a most encouraging character, and if such continue in the next paddock taken out capital will be forthcoming for the erection of a most up-to-date dredging plant especially adapted for dealing with the black-sand beach-deposits. The same favourable reports reach me from beaches at Saltwater, where an up-to-date dredge is now being built, and should be ready to commence dredging operations in two months, all things being favourable. Negotiations are in an advanced stage for the construction of dredges at the Five-mile, Okarito, and Gillespie's Beaches.

As a further mark of the line of progress in the matter in question, our almost isolated miners at Bruce Bay keep their ever-watchful eyes on the beaches for the combings, and as a result of

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their labours our gold-returns this year have increased. All available water has been taken up and utilised for washing purposes. The time is not far distant when greater attention will be paid to the utilisation of our mountain-streams as a motive power for many of our industries, and care must be exercised in not dealing too freely with our natural power without due consideration as to its future possibilities for elevating and hydraulic mining.

Our experience of dredging has not been very satisfactory, a number of the companies having gone into liquidation, mainly owing to light and defective machinery and the depth and tightness of the material dealt with. In this respect our sea-beaches are more likely to pay for working.

Prospecting-tracks.

The utility of the above-mentioned tracks is becoming more apparent in this district every year—especially I might mention the tracks up the Callery and the Great South Road. At Omarua there are extensive terraces that will require some very careful investigation by the prospectors of the district, and with careful investment of capital and labour I predict a great increase of population following up this industry. Further extension of these tracks, I deem, would be very safe expenditure on behalf of the public bodies. Before any expenditure is undertaken I would suggest that proper investigation of the ground should be made as to the suitability of the route for tracks. Those made up to the Whitcombe Pass may lead to prosperous results, as there are many different parties there investigating the resources of that part of the district. Prospectors are also exploring the upper reaches of the Taipo River. If any find of importance takes place there it may be very extensive, as there is a large extent of almost unprospected ground in that locality, and there is ample water in the district to carry out extensive sluicing operations, and ample timber for all mining purposes.

The works most urgently required in connection with mining on the Coast are an adequate water-supply for Back Creek and Seddon's Terrace, and prospecting-tracks to the back country. A plentiful supply of water would give direct returns to the investors. Tracks are more the duties of the authorities, as the returns are more indirect.

Timber, etc.

The timber trade is being largely developed, the output being limited by the want of facilities for getting it away.

Flax-milling is now being successfully carried on, and a very superior article placed on the market.

The railway to Ross is now under construction, employing a large number of men. The bridge over the Hokitika River is under construction. This combined with the railway to Ross will give an impetus to the southern trade that will largely benefit Hokitika.

Summary of Business.

The following is a summary of business and a statement of revenue collected in the Warden's Court during the year ending the 31st December, 1902:—

Hokitika.—Fees on applications, £17 6s.; miners' rights, £67 10s.; registrations, £8 11s.; licenses, £14 5s.; searches, £1 16s.; fees and fines, £6 6s.; rents, £455 4s. 10d.; miscellaneous, 15s.: total, £571 13s. 10d.

Kumara.—Mining applications received 119, value £11 18s.; miners' rights issued 292, value £73; licenses issued, 50; rents received, £557 11s. 2d.; fees and fines received, £52 12s.; search fees, £3 5s.; miscellaneous receipts, £335 16s. 10d.: total, £1,034 3s.

Ross.—Special claims granted 8, area 610 acres; extended claims granted 3, area 9 acres; ordinary claims granted 1, area 1 acre; prospecting licenses granted 10, area 760 acres; residence-sites licenses granted 2, area 2 acres; water-race licenses granted 7, length 9 miles 22 chains; dam licenses granted, 2; tramway licenses granted 1, length 60 chains; sawmill licenses and certificates of reservation 2, area 400 acres; hand-sawing and timber-cutting warrants 2, area 40 acres; applications received 205, value £20 10s.; miners' rights issued 115, value £28 15s.; licenses issued 13, value £3 5s.; rent received, £501 19s. 8d.; fees and fines, £3 7s.; searches, 1s.; registrations, £8 13s.; miscellaneous, £1 11s. 6d.: total, £568 2s. 2d.

Stafford and Goldsborough.—Mining applications 85, value £8 10s.; miners' rights issued 150, value £27 10s.; licenses issued 28, value £7; fees and fines received 8, value £3 10s.; searches made 3, value 3s.; miscellaneous (royalties, &c.) 4, value £121 14s. 7d.; registrations and transfers 233, value £11 13s.: total, £180 0s. 7d.

Okarito.—Applications received 49, value £4 18s.; miners' rights issued 61, value £15 5s.; licenses issued, 48; rents received, £283 9s. 10d.; miscellaneous receipts, £22 18s. 9d.; search fees, 2s.; fees and fines, Okarito Court, £2 18s.: total, £329 17s. 7d.

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List of Mining Privileges granted during Year ended 31st December, 1902.

License No.	Nature of Privilege.	To whom granted.	Locality.	Area. A.	R.	P.
		Hokitika.				
840	Prospecting area	Lucy Jane Harcourt	Block I., Kanieri Survey District	100	0	0
841	Hand-sawing and timber-splitting warrant	Henry Morris	Kanieri Forks	20	0	0
842	Certificate of protection	Commissioners' Flat Gold-dredging Company				
843	"	Perry's Reward Gold-dredging Company				
849	Residence-site	John Forsyth	Blue Spur	1	0	0
850	Extended claim	Richard Lemain and others	Kanieri Forks	5	0	0
860	Tail-race	Robert Knight and others	Back Creek			
864	Amalgamated claim	O'Neil and party	Seddon's Terrace	9	0	0
876	Certificate of easement	Hauhau Creek Dredging Company				
883	Sawmill license	William Hegan	Mahinapua	200	0	0
884	Reservation of timber area	"	"	200	0	0
885	Certificate of protection	Hugh McKinnon				
887	Tunnel	John Beroz	Mitchell's Terrace, South Hokitika			
888	Dam	"	Ditto			
889	"	"	Mitchell's Gully, South Hokitika			
890	Extended claim	"	Mitchell's Flat, South Hokitika	5	0	0
891	Special site	"	Mitchell's Terrace, South Hokitika	5	0	0
892	Water-race	"	Mitchell's Gully, South Hokitika			
893	Special claim	Brown and Howat	Brighton Terrace, South Hokitika	10	0	0
894	Tunnel	"	Ditto			
895	Extended claim	George Pfahlert	Kanieri Forks	4	0	0
896	Certificate of protection	Charles Davey				
899	Water-race	George Noble	Lark's Terrace			
901	"	"	"			
902	Extended claim	Patrick McQuilkin and others	Blue Spur	3	3	0
908	"	Thomas Martyn and others	"	4	0	0
907	Residence-site	Ann Young	Arthurstown	0	2	0
909	Water-race	Nicholas Davis	Humphrey's Gully			
910	Dam	"	"			
912	"	Jane Feeney	Blue Spur			
914	"	"	"			
916	Water-race	"	"			
918	Residence-site	Henry-Martin Clausen	Hokitika–Ross Road	0	2	0
923	Sawmill license	William Hegan	Shallow Rush Road	200	0	0
924	Hand-sawing and timber-cutting warrant	Richard John O'Brien	Frosty Creek	20	0	0
925	Ordinary claim	John Anderson	Kanieri Forks	1	0	0
926	Water-race	"	"			
927	Extended claim	James H. Spence and others	Back Creek	2	0	0
928	Tail-race	William A. Cooper and others	"			
931	Hand-sawing and timber-cutting warrant	William Stephens	Frosty Creek	20	0	0
932	Tramway	William A. Cooper and others	Back Creek			
933	Certificate of protection	McQuilkin and party				
934	Ordinary claim	Choo Gee and others	Kanieri Forks	1	0	0
935	Water-race	"	"			
936	Tail-race	"	"			
937	Certificate of protection	Ann Young				
938	Prospecting area	Augustus Boys	Arahura Flat	100	0	0
939	Tail-race	George Noble	Lark's Terrace			
942	Certificate of reduction	Humphrey's Hydraulic Sluicing Company				
943	Amalgamated claim	Commissioners' Flat Gold-dredging Company	Blocks I. and V., Kanieri Survey District	88	3	2
944	Residence-site	Margaret Mills	Rimu	0	2	0
945	Special claim	Peter Hansen and party	Back Creek	6	0	0
946	Amalgamated claim	Kirwan and party	Woodstock	10	0	0
948	Ordinary claim	George Hagen	Tucker Flat	1	0	0
949	"	John Hagen	"	1	0	0
950	Prospecting area	Peebles and Noble	Four-mile Creek	32	0	0
951	Certificate of protection	Western Water-supply, Electric Power, and Gold-dredging Co.				
952	Prospecting area	Caroline Cullen	Arahura	6	0	0
956	Dam	David John Hutchison and another	Kanieri			
957	Ordinary claim	John Anderson	Kanieri Forks	1	0	0
958	Special claim	Lucy Jane Harcourt	Arahura Flat	19	0	0
959	Water-race	Patrick Douglas	Woodstock			
960	"	Duncan Edward Clerk	Kanieri Lake			
961	Prospecting area	John McKay	Block V., Kanieri Survey District	100	0	0

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LIST of MINING PRIVILEGES GRANTED—*continued.*

License No.	Nature of Privilege.	To whom granted.	Locality.	Area. A.	R.	P.
		HOKITIKA—*continued.*				
962	Special claim	John Stewart and party	Kanieri River	10	0	0
963	Water-race	"	"			
964	Amalgamated claim	Arthur Clifton and party	Seddon's Terrace	12	0	
967	Hand-sawing and timber-cutting warrant	George Mears	Rimu	20	0	0
968	Special claim	Henry Gilfillan	Seddon's Terrace	92	3	16
969	"	David Abbott	"	95	2	21
970	"	Duncan Edward Clerk	"	90	0	31
971	"	Wilfred Ewing Bruce	Brighton Terrace	97	0	24
972	"	John Anderson	Back Creek	6	0	0
973	Residence-site	David Stuart	Seddon's Terrace	1	0	0
974	Prospecting area (Native land)	Carl Johannes Edward Linnemann	Fisherman's Creek	100	0	0
975	Amalgamated claim	Maloney and party	Back Creek	7	0	0
976	Water-race	Brown and Green	Rimu Flat			
978	Special claim	Park and Boyes	North Hokitika	37	0	0
979	"	Caldwell and Cropper	Arahura Beach	96	0	0
980	Dam	McLachlan and Black	Arthurstown			
981	Water-race	"	"			
982	Special claim	Brown and Green	Brighton Terrace	6	0	0
983	Extended claim	Hartke and Thomson	Back Creek	4	0	0
984	"	Augustus Boys	Block II., Kanieri Survey District	3	0	0
985	"	Baucke and Donoghue	Tucker Flat	2	0	0
986	Residence-site	Ferdinand Vroblfski	Woodstock	0	2	0
988	Extended claim	Duske and party	Back Creek	4	0	0
996	Residence-site	Thomas Spence	Rimu	1	0	0
997	Certificate of protection	Augustus Boys				
998	Special claim	Arthur John Knowles and others	Back Creek	6	2	0
999	Ordinary claim	Richard Boucher	Tucker Flat	1	0	0
1000	Extended claim	Hyndman and Wells	Back Creek	4	0	0
1001	Certificate of protection	John Stewart and party				
1002	"	Arthur Clifton and party				
1004	"	Ann Young				
1005	Extended claim	Robert Parker and party	Brighton Terrace	5	0	0
1006	Special claim	Albert Everett	Wataroa River	100	0	0
1008	Extended claim	John Druce and party	Block V., Kanieri Survey District	4	0	0
1009	Special claim	Surginor and Willoughby	Ditto	6	0	0
1011	Residence-site	William Griffiths	Blue Spur	1	0	0
1012	Tailings-site	George Hagen	Tucker Flat	0	2	0
1013	Tunnel	"	"			
1014	Special claim	Harvey and McDonald	Block I., Kanieri Survey District	6	0	0
1015	Tunnel	"	Kanieri			
1017	Extended claim	Richard Beck and others	Tucker Flat	3	0	0
1018	Certificate of protection	William J. Burke				
1022	Prospecting area	Peter Melican and others	Back Creek	60	0	0
1026	Dam	William McKay and others	Rimu			
1027	"	"	"			
1028	Drainage area	"	"	54	0	0
1029	Water-race	Montezuma Gold-dredging Company	Section 1012, Arahura Survey District			
1030	Certificate of reduction	Humphery's Hydraulic Sluicing Company				
1032	Amalgamated claim	William O'Connor and others	Seddon's Terrace	12	0	0
1033	Sawmill license	James Lincoln	Mahinapua	200	0	0
1034	Reservation timber area	"	"	200	0	0
1035	Tramway	Jules Cæsar Malfroy	Arahura Flat			
1036	Reservation timber area	"	"	200	0	0
		KUMARA.				
1	Prospecting license	S. H. Harris		8	0	0
2	Extended claim	P. Callwell		2	0	0
3	Water-race	J. Sousal				
4	Tail-race	W. J. McIlroy				
5	Sawmill license	Otto Petersen		196	0	0
6	Timber reservation	"		179	0	0
7	"	"		173	0	0
8	"	"		190	0	0
9	Residence-site	Charles Cox		0	1	0
10	"	A. Modler		0	2	0
11	Sawmill license	John W. Callwell		195	0	0
12	Timber reservation	"		200	0	0
13	"	"		195	1	0
14	"	"		193	3	0
15	"	J. D. Gillies and another		199	2	0
16	"	"		155	0	0
17	Sawmill license	J. W. Burrell		100	0	0
18	Special claim	Thomas Madden		6	0	0
19	Extended claim	Conrad Werner		3	0	0
20	Residence-site	Three-mile Greenstone Company		0	2	0
21	Water-race	S. Dixon				

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LIST of MINING PRIVILEGES GRANTED—*continued.*

License No.	Nature of Privilege.	To whom granted.	Locality.	Area.
		KUMARA—*continued.*		A. R. P.
22	Special claim	John Ritchie		6 0 0
23	Extended claim	Edward Rochford		4 0 0
24	Water race	Kenneth McLeod		
25	Special claim	Edward Rochford		8 0 0
26	Prospecting license	P. Buttola		40 0 0
27	Special dredging claim	Three-mile Greenstone Creek Co.		50 0 0
28	Timber reservation	William Morris		200 0 0
29	Special claim	John Scott		12 0 0
30	Residence-site	Justina Aynsley		1 0 0
31	Dam	W. J. Lamason		
32	Branch water-race	"		
33	Residence-site	A. C. Campbell		0 3 0
34	Special dredging claim	New Greenstone Gold-dredging Company		61 1 0
35	"	Greenstone Junction Company		78 3 28
36	Water-race	James Begg and others		
37	Tail-race	"		
38	Dam	"		
39	"	"		
40	Water-race	John Burr		
41	Special claim	John Harrington		10 0 0
42	Tail-race	"		
43	Special claim	Henry Burr		6 0 0
44	"	W. Berdiner		
45	"	James Begg		10 0 0
46	Residence-site	Charles Purson		1 0 0
47	Water-race	W. Berdiner		
48	Drainage-race	"		
49	Residence-site	Marco Damini		0 1 0
50	Main tail-race	G. R. Rudkin and others		
		STAFFORD AND GOLDSBOROUGH.		
445	By-wash	Waimea Hydraulic Sluicing Co.	Waimea	
446	Ordinary prospecting license	"	"	40 0 0
447	Tunnel tail-race	J. O'Sullivan and party	"	
448	Special tailings-site	M. Bernson and party	Callaghan's	0 2 0
454	Water-race	K. Foohore	Liverpool Bills	
455	Certificate of protection claim	G. Punch and D. Cook	"	
456	Residence-site	Sarah Glover	Tunnel Terrace	1 0 0
457	Special sluicing claim	Check Sun and party	Red Jack's	6 0 0
458	Tail-race	Dunne and party	Waimea Creek	
459	Residence-site	Trustees, Hokitika Benevolent Institution	Piper's Flat	1 0 0
460	Tramway	Peter Negri	Callaghan's	
461	Extended sluicing claim	J. Manzoni	German Gully	4 0 0
465	Residence-site	Samuel Shields	Liverpool Bills	1 0 0
466	Indorsement water-race license, 74	Wheel of Fortune	Foxe's Creek	
467	Water-right	"	"	
468	Protection certificate extended claim, 62681	P. Rowland	Waimea	
473	Dam	Ah Chung and party	German Gully	
474	Protection certificate tail-race, 447	J. O'Sullivan and party	Waimea	
475	Extension of tail-race	J. F. Byrne and party	"	
476	Residence-site	R. Thomson	Piper's Flat	1 0 0
478	Special dredging claim	J. D. Gillies	Auckland Beach	99 1 0
479	"	J. Caldwell	"	84 1 32
480	"	E. Wickes	"	83 2 36
481	"	J. Taylor	"	73 2 38
482	Sawmill license	Westland Sawmilling Company	Fifth and Sixth Terrace	200 0 0
483	Reservation license	"	"	200 0 0
484	Dam	J. Merewether and party	McKinley's Terrace	
485	Water-race	"	"	
486	"	Wheel of Fortune	Foxe's Creek	
487	Special driving claim	A. Jamieson and party	Kelly's Terrace	7 0 0
488	Protection certificate water-race	W. Perry	Waimea	
489	Extended alluvial claim	R. Sutherland	Kelly's Terrace	3 0 0
490	"	J. A. Kidd	"	3 0 0
491	"	James Lincoln	"	3 0 0
492	"	D. Twoomey	"	3 0 0
493	"	G. Rebay and party	Arahura Flat	3 0 0
494	Drainage-race	"	Kelly's Terrace	
496	Ordinary alluvial claim	Kung Young	Foxe's	1 0 0
500	Branch water-race	Manager, Government Water-race	Waimea	
501	Special sluicing claim	Frederick Henne	Waimea Creek	10 0 0
502	Water-race	R. A. Chambers	Liverpool Bills	
503	Deviation of water-race	J. Mundy	German Gully	
504	Water-race	"	"	
510	Special driving claim	J. A. Kidd and party	Kelly's Terrace	9 0 0
511	Dam	J. Gallagher	Ballarat Hill	
512	Tail-race	J. O'Sullivan and party	Middle Branch	
513	Protection certificate dam, 284	"	"	
518	Water-race	Ah Gee and party	German Gully	
519	Extended claim	P. Romas and party	Middle Branch	3 0 0

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LIST of MINING PRIVILEGES GRANTED—*continued.*

License No.	Nature of Privilege.	To whom granted.	Locality.	Area.
	STAFFORD AND GOLDSBOROUGH—*continued.*			A. R. P.
520	Residence-site	M. Bernson	Callaghan's	1 0 0
525	Extended sluicing claim ..	Ah Joe and Ah Buck	German Gully	2 0 0
526	Tail-race	"	"	..
527	Dam	"	"	..
528	"	"	"	..
529	Extended claim	G. Pimpernell	Scandanavian Terrace ..	5 0 0
530	Tail-race	"	German Gully	..
531	Extended alluvial claim ..	T. Dunne and party	Middle Branch Flat ..	2 0 0
532	Special sluicing claim	F. Carmini and party	" ..	7 0 0
533	Tail-race	G. and H. Linklater	German Gully	..
534	Extended sluicing claim ..	"	"	4 0 0
535	Tailings-site	"	"	3 0 0
536	Extended sluicing claim ..	H. Linklater	Scandanavian Terrace ..	5 0 0
537	Tail-race	"	" ..	..
538	Tailings-site	"	" ..	5 0 0
539	Indorsement sawmill license, 415	J. Olsen and party	Arahura	200 0 0
543	Special sluicing claim	S. Perry	Tunnel Terrace ..	12 0 0
544	Dam	"	" ..	..
545	Tail-race	"	" ..	..
546	Extension of water-race ..	"	Higg's Gully	..
547	Protection certificate sluicing claim, 487	George Taylor and party ..	Kelly's Terrace ..	7 0 0

No.	Description.	Remarks.
	OKARITO.	
217	Special claim	Fergus McLeod; 100 acres; Saltwater.
219	Prospecting license	W. Patrick; 100 acres; Omeroa River.
220	"	George Park; 18 acres; Waiho.
221	"	Edward Gibb; 100 acres; Waikukupa.
225	Special claim	Henry Butland; 90 acres; Saltwater.
227	"	W. Liddell; 100 acres; Five-mile.
229 to 240	Prospecting license	G. Carter; 100 acres; Okarito Lagoon.
241	"	Westland Company; 100 acres; Waiho.
242	"	" " "
243	"	G. Park; 4 acres 3 roods; Waiho.
244	Dam	M. Guinane; Waiho Creek; 15 ft. by 3 ft.
245	Water-race	W. Liddell; Alpine Race; Five-mile.
246 to 261	Prospecting license	Peter Bell; 80 acres; Waiho.
262	Special claim	Westland Company; Exchange of Title.
263	Prospecting license	T. Olliver; 100 acres; Waikukupa.
264	Dam	John Ritchie; Mahatahi.
265	Water-race	W. McCullaugh "
266	Prospecting license	T. Olliver; 100 acres; Waikukupa.
267	"	J. Grimond; 100 acres; Sandfly.
269	"	J. Taylor; 40 acres; Haast.
270	Water-race	" " "

I have, &c.,
D. MACFARLANE, Warden.

The Under-Secretary, Mines Department, Wellington.

Mr. Warden KEDDELL to the UNDER-SECRETARY for MINES, Wellington.

SIR,— Warden's Office, Oamaru, 6th June, 1903.

I have the honour to report, for the information of the Hon. the Minister of Mines, that during the past year nothing worthy of comment or remark has occurred within the Livingstone and Maerewhenua Districts, save the completion of the Mountain Hut Water-race. This work, the object of great expectations from the miners, has been in hand for the past ten years, and would not have been finished yet were it not for the assistance of the Government.

I am afraid the water-supply from this source will not come up to the anticipations of the projectors of the race. From some cause or other the quantity of water at the point of supply is out of proportion smaller than the amount obtained from its sources, a large amount being lost in some manner in transit.

In all other respects this sub-district remains as before as to population and earnings.

I have, &c.,
JACKSON KEDDELL, Warden.

The Under-Secretary, Mines Department, Wellington.

Mr. Warden CAREW to the UNDER-SECRETARY for MINES, Wellington.

SIR,— Warden's Office, Dunedin, 27th March, 1903.

I have the honour to forward herewith statistical returns for the Hindon district for the year ending on 31st December, 1902.

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There are now only forty-three miners employed in the district, and nothing has occurred during the year to require special mention. I have, &c.,
E. H. Carew, Warden.

The Under-Secretary, Mines Department, Wellington.

Mr. Warden McEnnis to the Under-Secretary for Mines, Wellington.

Sir,— Warden's Office, Naseby, 25th May, 1903.

In forwarding the mining statistics for Mount Ida district for the year ended the 31st December, 1902, I have the honour to supplement same with the few following general remarks:—

At Naseby there are six small claims being worked on the "Maori bottom," with fair results; but, as I anticipated in my last report, only a small area has been taken up as claims. There is not a good fall for the discharge of tailings, and this of course militates against the working of a large area. The rest of the mining around Naseby is carried on by means of hydraulic elevating, with the exception of a few small claims and some fossicking, and I believe all are satisfied with their earnings.

At Patearoa and Serpentine nothing new has occurred during the year. Those mining around there seem to be doing fairly well.

At Hyde mining matters are very quiet, about the same number of miners working as last year. At Mount Highlay there are some men employed at quartz-mining, but nothing good has been struck as yet.

At Kyeburn the same state of matters exist as formerly reported. The miners seem satisfied with their earnings. The Naumai dredge has ceased operations for the present at least. This is not a healthy sign.

At St. Bathan's those claims working have had a good year. The Scandinavian Company have won a good deal of gold. It has two claims—one called the Kildare lead and the other the Lagoon—worked by means of elevating plant. The former is worked by an elevator of one straight lift of 105 ft. (one of the highest, if not the highest, in New Zealand), having a pressure of 405 ft. The Lagoon Claim's elevator is 35 ft. high, having a pressure of 308 ft. The company employ about twenty men, and have a supply of thirty heads of water from the Manuherikia River. The Shamrock Company's claim is also worked by an elevator 25 ft. high, with a pressure of 300 ft. This company has also had a good year's yield of gold.

The Kildare Hill and the Vinegar Hill Claims, owned by Mr. John Ewing, are not now working.

At Cambrian's, Fordham and Gay's claim is worked by an elevator, with good results. There are in this locality a few fossickers, all evidently making a living.

At Matakanui the Mount Morgan and the Matakanui Company's claims still maintain their reputations of being very good claims. Besides these there are some small claims which are said to be paying fairly well.

The Cairntrodlie dredge, erected towards the end of the year at Poolburn, Ida Valley, so far is giving satisfactory yields.

At Middlemarch there are only a few miners at work ground-sluicing, making small wages.

At Macrae's Flat there have been no fresh developments of any importance, and, except in quartz, mining has gone back. None of the sluicing-claims are on anything but a very small scale owing to the inadequate water-supply, and there is (except with an expenditure far beyond what the prospects warrant), no chance of increasing it. What little sluicing there is is mostly done by Chinese. The second dredge which was started on Macrae's Flat was, like its predecessor, a failure, largely due to the amount of stiff clay in the wash making it difficult to treat, and taking the gold away with it. This dredge was shifted in July last to Poolburn.

In Shag Valley the Dunback dredge has been shifted to Southland. The Inchdale and the Inch Valley dredges which remain have averaged 12 oz. to 20 oz. each per week during the year.

In quartz-mining the results as a whole have been better, and the returns, though small, have been regular.

The Golden Bar Mine, which is worked by a private party, has had some very good returns, yielding, I believe, from £10 to £14 a man per week above expenses; and they have a large body of stone, with good prospects ahead. This mine has for the past three years been a consistent gold-producer, and, as the permanence of the reef is practically assured, the future prospects of the fortunate owners are exceedingly bright. The mine is worked by tunnelling and stoping, and the machinery consists of a ten-head battery, a feeder, and rock-breaker driven by an 8-horse-power steam-engine. Eight men are employed, including the shareholders.

Ounce Mine, Macrae's, owned by Messrs. Spiers and Ross, has been let on tribute to Messrs. Lidston and Sinclair, and the yield of gold during the year has been satisfactory.

The Bonanza Mine, owned by Mr. L. O. Beal, has not done much working during the year, but the returns, I believe, have been satisfactory. Six men are employed at this mine.

The Maritana Mine, owned by Mr. C. McGill, and situate alongside the Golden Point Mine (but not same reef), has been started during the year; but little crushing has been done, owing to shortage of water, although, I believe, the returns were satisfactory. This mine is worked by a six-head battery of stamps, driven by an overshot water-wheel.

The Golden Point Mine, owned by Messrs. W. and G. Donaldson, has been continuously at work during the year, and employs ten to twelve men. A new ten-head battery has been put in; also a new concentrating-table, known as "the Woodbury," which has a larger capacity than the Vanner. The concentrates consist of scheelite, which is shipped direct to Germany. This is

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the only mine in the colony that dresses scheelite for the market. The scheelite is found mixed with the quartz, sometimes pure enough to be shipped after hand-picking; but the bulk is got from the concentrating-tables after the gold has been taken from the quartz with the ordinary battery treatment. The owners lately purchased the Incholme dredge at Shag Valley, which they dismantled, and brought the engine and boiler to the battery, to take the place of the 15-horse-power oil-engine they used when short of water. Considerably over £1,000 has lately been spent on improvements at the battery and mine, and it is to be hoped that the enterprising owners will be amply rewarded by future good results from the mine.

Gold to the value of £60,286 5s. 10d. has been purchased by the banks in the district during year, being an increase of £12,264 10s. 4d. over the amount purchased for the year ended 31st December, 1901.

Statements showing total revenue under the various heads are also forwarded.

Courts at the appointed places have been regularly held during the year.

I have, &c.,

The Under-Secretary, Mines Department, Wellington. J. McEnnis, Warden.

Mr. Warden Cruickshank to the Under-Secretary for Mines, Wellington.

Sir,— Warden's Office, Lawrence, 28th March, 1903.

I have the honour to forward to you herewith the statistical returns for the year ended the 31st December, 1902, and to submit the following report on the several mining districts under my charge for the same period:—

Wetherstone's, Blue Spur, and Tuapeka Flat.

At Wetherstone's the Golden Crescent Sluicing Company, the Local Industry Gold-mining Company, and Messrs. Smyth, Adams, and Donlan have been working throughout the year, with fairly good results.

At the Blue Spur things are not so bright, a slip having occurred in the Consolidated Company's claim, causing part of the mine to be flooded, and considerable loss of time must take place and expense be incurred before the mine can be put into proper working-order again.

Messrs. Kitto and party are now working the cement portion of their claim in Munro's Gully, but with what result I have not ascertained.

At the Tuapeka Flat three dredges have been working, and the returns have been fairly satisfactory.

Clutha River at the Beaumont.

Three dredges are working in this vicinity, but the returns are small in each case.

The only other dredge working on the Clutha River below the Tallaburn Creek is the Otago No. 2, formerly the Golden Glen dredge, which, together with the claim, was bought by the Otago Dredging Company last spring, and has been yielding fairly satisfactory returns ever since.

Waipori.

No new ventures or claims have been started in this locality since my last report, but I am credibly informed that nearly all the dredging and sluicing claims have yielded good average returns throughout the most part of the year.

I regret to have to report that operations have not as yet been recommenced in the O.P.Q. Quartz-mine.

Waitahuna.

There is nothing new to report on in this locality. Five dredges are still at work, but as they are owned by private syndicates the returns are not made public.

Tapanui.

Mining in this locality during the twelve months has been pretty well at a standstill. One dredge working on freehold property, and scarcely any other kind of mining has been carried on.

Gore (Including Waimumu, Charlton Creek, and Waikaka.)

I have to report that the mining industry in these localities appears to be in a prosperous condition, and there are no indications at present that it will go back in the near future, as was indicated some time ago.

It is certainly very difficult to ascertain how many of the dredges round about here are doing, on account of their being owned by private companies, which do not publish their returns, and decline to give any information respecting them; but the general belief is that they are paying well. As I have stated in my previous reports, dredging is the only method of mining pursued here, and it gives employment to about 230 men.

There are sixteen dredges at Waikaka, one on the Mataura River, five at Charlton Creek, and seven at Waimumu, making a total of twenty-nine, all of which are actually at work.

The revenue for the year amounted to £665 17s. 4d., but a good deal of the mining is being carried on on freehold property, and consequently produces no revenue.

Waikaia.

Mining in this locality has maintained a fairly even tenor throughout the year, The dredges at work—viz., the Mystery Flat and the Muddy Creek—have yielded very consistent payable returns for some time past, and in consequence of these returns a lot of prospecting has been done, and

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the results having proved satisfactory four new dredges are being built, one for each of the following companies: The Fairdown Dredging Company, the Garry Owen Company, the Nugent Wood Company, and the Hessey Dredging Company.

I have ascertained, on reliable authority, that about 2,600 oz. of gold has been won in this district for the year.

Two of the hydraulic elevating companies—viz., the Gow's Creek and the Winding Creek Companies—have gone into voluntary liquidation, the former on account, apparently, of the ground not being payable, which was a great pity, after spending about £3,000 in bringing in a fine water-race, and the reason for the latter was on account of the water-supply not being regular.

The total revenue collected for the year at Waikaia amounted to £366.

I have, &c.,

G. Cruickshank, Warden.

The Under-Secretary, Mines Department, Wellington.

Mr. Warden Burgess to the Under-Secretary for Mines, Wellington.

Sir,— Warden's Office, Queenstown, 15th May, 1903.

I have the honour to forward herewith statistical returns for the Dunstan portion of the Otago Mining District, together with report on same:—

Queenstown and Arrowtown Sub-district.

Dredging in this portion of the district has on the whole proved very unsuccessful, though the few dredges which are still at work are getting payable returns.

The Maori Point dredge on the Shotover River has been completed, and has been working through the year with satisfactory results. Encouraged by the success already met with, the company is putting on a new dredge to work the upper part of the claim.

Further down the river the Prince Arthur Company, which started operations during the year, has obtained some good returns, though work has been considerably interfered with by the heavy drift occasioned by the frequent rains which fell during a portion of the year.

On that part of the Kawarau River situated in this sub-district no dredges are now actually at work, but the Gibbstown Company is ready to commence.

The Kawarau Bridge dredge has been lying idle for some time.

At Cardrona the Lone Star and La Franchi's Freehold dredges are getting payable though not large returns. The latter, being worked by water-power (O'Brien's patent), is worked at comparatively small expense.

Alluvial mining is still the most important branch of the industry in this sub-district, and of the various parties engaged the majority are doing well. The most valuable claims are on the Shotover River; and about Skipper's Messrs. Rogers, Stevenson, Johnson, Smith, and Lee are still carrying on profitable operations in their respective claims, which have been yielding remunerative returns for some years. Several new claims are being opened out, Davis Bros., Hamilton and party, and the Muddy Creek Sluicing Company holding the most promising.

At the Shotover Big Beach, the Arthur's Point Sluicing Claim (Tyrrell and party) is still getting good returns.

At Moke Creek the Moonlight Sluicing Company is at work, and the Moonlight No. 2 Company's claim is being worked by tributers.

The operations of a small party working the terraces on the Kawarau River below the Shotover Junction promise to result very satisfactorily to the shareholders.

The only work of any importance on the Arrow River is being carried on by the Arrow Falls Company, which for some years past has been prosecuting works of considerable magnitude in developing this claim. These works have been well designed and systematically carried out, and the claim is now in admirable condition for profitable working. At Macetown, Anderson and party hold a claim which is paying well.

Though almost all the Cardrona dredges had to suspend operations, and have been removed out of the district, the existence of payable gold in that locality is evidenced by the success which is attending the efforts of alluvial miners, and especially of Mr. Little, who has erected a very efficient plant on his own ground, to which he is now adding. So far his operations have been attended with great success.

Attention has latterly been once more directed to the quartz reefs existing in the district. A Reefton party who have been prospecting about the Skipper's reefs have found encouraging prospects, and are contemplating the erection of quartz-crushing machinery. A number of local miners and some Dunedin syndicates have taken up quartz claims in the same locality, and are actively engaged in prospecting.

The Shotover Mining Company has gone to considerable expense in improving their machinery and erecting a cyanide plant, in order to more profitably treat larger quantities of stone than they have previously been able to do.

The Achilles Mine, which has been shut down for the greater part of the year, is, it is understood, under offer to some London capitalists.

The Invincible reef, at the head of Lake Wakatipu, has been taken up again by a Dunedin syndicate.

The Premier Mine at Macetown is still working vigorously. Operations have been maintained all through the year, and the returns have averaged about 150 oz. per month. The flotation of a London company to work other reefs near Macetown at present held by Mr. W. J. Farrell is almost completed.

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A small party is working in a scheelite-mine a few miles above Glenorchy, but their operations have not yet assumed any magnitude.

The iron-lode at Moke Creek continues to attract some attention, though very little is known regarding it, and comparatively nothing has yet been done on it.

Cromwell Sub-district.

Operations in this sub-district have been on the whole profitably carried on during the past twelve months. There are no changes of importance to notice.

Dredging is gradually assuming the condition which it is likely to maintain for several years to come. The merely speculative and unprofitable claims are being surrendered, leaving only such holdings as may be considered to fairly justify continued work and development. As against the number of claims which have been given up, seventeen new claims have been granted during the year. As the experience gained during past years has shown what localities are likely to prove payable, most of these claims should be worked with profit. That portion of the Upper Clutha lying between Lowburn and Cromwell is being thoroughly prospected.

The Rise and Shine dredge has been completed since my last report, and has commenced operations. The result of her work has been most gratifying as establishing the payable nature of this portion of the river.

Several large dredges are now in course of construction for work in this locality. Of these, the Rising Sun dredge will, when completed, be one of the largest dredges in Otago, and will, it is confidently expected, prove quite capable of working the deep wash known to exist on this claim.

A number of dredges on the Kawarau River, principally below the Kawarau Gorge, and two or three at the Nevis, continue to return good dividends to the shareholders.

Thirty-eight alluvial claims were granted in 1902, comprising areas ranging from 1 to 19 acres. Of these, twelve are situated in the Lowburn, Mount Pisa, and Luggate districts, four at Nevis, fourteen at Gee's Flat, Kawarau Gorge, seven in Bannockburn and the Carrick Range, and one at Bendigo. Out of this number a few have already been surrendered as not payable, but the remainder are being steadily and profitably worked.

At Gee's Flat, where there is not an adequate supply of water, the method of working mainly pursued is driving and sinking, while at Luggate, Bannockburn, Carrick Range, and Nevis most of the gold is obtained by sluicing.

At the Nevis two claims are being successfully worked by means of hydraulic sluicing. Owing to the very favourable results of operations in this locality there seems every reason to expect a considerable expansion of the industry in this quarter during the coming year.

A revival of interest is in this, as in the Queenstown Sub-district, taking place in quartz-mining. On the Carrick Range near Bannockburn mining has quite recently been resumed on ground formerly worked but now abandoned for some years. It is believed that the application of the cyanide process to the treatment of the ore will again render the working of quartz claims in this district payable. Up to the present, however, no experiments have yet been made.

On the Mount Pisa Range several quartz claims have been granted, and steps are being taken to properly test this ground.

At Bendigo a party of miners who have erected a small battery (which is driven by an oil-engine) are engaged in opening up a reef of fairly rich but somewhat patchy stone.

The Bendigo Mine, which some years ago yielded such splendid returns, has been reworked to some extent during the past year, but the necessary capital not being available for thoroughly opening out the mine and driving the low-level tunnel, now regarded as the only effective method of working the mine, operations have been suspended and are not likely to be resumed. A cyanide plant was erected for the purpose of treating the large quantity of battery-tailings accumulated during many years past. The work was at first attended with very promising results, but the yield of gold on the whole proved a disappointment, and work has been discontinued.

Clyde and Alexandra.

Dredging still retains its paramount position throughout this portion of the mining district, and although the river and banks between Clyde and Alexandra have been subjected to many years of successful operations there seems to be no diminution in the yearly returns.

Mining by way of sluicing, however, shows a decided falling-off. With few exceptions the parties who for many years utilised the water from the Fraser River, on the banks of the Clutha, have retired from the industry.

The Alexandra Bonanza Company has succeeded in bringing in the water from the Manorburn, and has commenced sluicing operations on the Galloway Flat. A few fairly payable returns have been obtained, but it is doubtful whether the ground is good enough to remunerate a company of such a large capital as has been invested in this undertaking.

Several attempts have been made to prospect new ground, especially on the Galloway Terraces. A rush to this ground took place twelve months ago, and about twenty or thirty small claims were pegged off, but after being worked for a few months these claims were thrown up. The ground proved to be "patchy," and as the supply of water was limited it could not be worked profitably.

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Part of Cardrona Dredging Field, showing the La Franchi Claim and Dredge.

Face p. 170.] O'Brien's Patent Hydraulic-power Dredge, La Franchi's Claim, Cardrona, Otago. (Elevator not shown.)

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About 75 acres of this land has since been applied for in one claim by Appleton and party, who propose to form a company to bring water in and work the ground by hydraulic sluicing, but this will be an expensive matter.

As regards dredging, that part of the river above Clyde and below the Half-way House has with one exception proved a failure. The Monte Christo dredge is still working, but her returns are only moderate. During the year, owing to the many fluctuations in the level of the river, this dredge worked only twenty weeks, averaging 36 oz. per week.

Further down the river from this claim to the Vincent Company's claim, a distance of about five miles, is not now being worked, the companies which held the ground having gone into liquidation. I have reason to believe, however, that some of the river will soon be worked again.

Around Alexandra dredging has been exceptionally prosperous, as a reference to the statement attached of companies working will show. The dredges in this sub-district alone have paid during the year 1902 the sum of £50,997 in dividends, and this does not include the profits of some private companies which I am led to believe are very satisfactory.

Four dredges are at work again in the Manuherikia River with moderate success. The amount of drift travelling in this river always tends to silt the paddock, and greatly increases the difficulties of working. The one exception is the Olrig, which has paid back 35 per cent. of her capital in dividends. There is a large area of splendid dredging-ground in this valley which would pay about 12 oz. or 15 oz. per week, and if worked on the O'Brien patent system would be certainly payable, but the scarcity of water is the chief drawback to this system being attempted.

The dredges in the gorge below Alexandra have met with fair success during the year, and many have been altered to cope with the different conditions found in gorge dredging. The result should be a very successful year to follow. One difficulty, though by no means insuperable, appears in dredging this portion of the river, and that is coaling. The present system is costly, as the coal has to be carted to a certain point, sledged to the river, and then boated down to the dredges. Lately, however, the various companies interested have joined in discussing the construction of a road along the river-bank.

The Earnscleugh No. 3 dredge has commenced operations during the past twelve months. This dredge is worked by electricity, which is conveyed to the dredge from the Fraser Gorge, four miles distant.

Antimony Mine.—Messrs. Blair and Stewart obtained a license to prospect for antimony over some 40 acres opposite Alexandra, and after opening a shaft they sent to England about 40 tons of ore, which realised £4 10s. per ton. The ore when assayed in Dunedin yielded 50 per cent. of antimony, but ore from the same parcel gave only 31 per cent. in England; and it also assayed gold to the value of 8s. 6d. per ton. The party after expending over £600 had to cease operations owing to lack of funds, but it is believed that with capital the mine could be opened up and made to pay.

Bald Hill Flat.

Quartz-mining is being still carried on at the Excelsior and White's reefs on the Old-man Range, apparently paying satisfactorily.

Sluicing is being vigorously prosecuted at Bald Hill Flat, and the Last Chance Company has reached the dividend-paying stage. A claim worthy of note is that of Dowdall and party, who are sluicing the freehold on which the Bald Hill Flat dredge was working some time previously, and although the dredge could not pay, the sluicing operations have been very successful.

Roxburgh.

Referring to the attached statement of dredges working in this sub-district, it will be seen that out of the sixteen working only four have paid dividends. But compared with last year the result must be considered favourable, for all the dredges have averaged well in their returns.

At Miller's Flat dredging has been very prosperous, and most of the companies and parties at work there have paid large dividends.

At Ettrick also the Ettrick Company is meeting with good success.

Alluvial.—The Roxburgh Amalgamated Company at Roxburgh East still heads the list as a successful sluicing claim, and during the year paid £2,250 in dividends. The Ladysmith Company is also working, and obtaining good returns. The number of smaller claims shows no sign of decreasing, and most of them I believe are paying well.

I append a return showing the quantity of gold produced by sixty-two dredges during the year ended the 31st December, 1902, an approximate amount of capital involved, the average return per working-week, and the amount of dividends paid. It will be seen that thirty, or nearly half the number engaged, returned to the shareholders £107,506 6s.

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RETURNS of SIXTY-TWO DREDGES, showing the AVERAGE for each WORKING-WEEK and the DIVIDENDS PAID, for the Year ended 31st December, 1902.

Name of Company.	Capital.	Amount of Gold won.	Number of Weeks worked.	Average Return per Working-week.	Dividends paid.	Interest on Capital invested.
	£	Oz. dwt. gr.		Oz. dwt. gr.	£ s. d.	Per Cent.
Matau	7,000	1,046 10 0	37	28 5 16	1,225 0 0	17½
Dunstan Lead	17,487	1,345 4 0	42	32 0 13	..	..
Davis Bend	9,800	768 5 0	28	27 8 18	..	..
Monte Christo	10,000	735 0 0	20	36 15 0	480 0 0	5
Unity	10,500	2,124 3 0	32	66 7 14	4,725 0 0	45
Alexandra Eureka	12,000	791 11 0	29	27 5 21	1,500 0 0	12½
Chicago	5,000	954 7 7	43	22 3 21	1,375 0 0	27½
Enterprise I.	7,000	1,723 9 1	46	37 9 7	5,600 0 0	80
Enterprise II.		1,474 13 20	44	33 10 7		
Earnscleugh I.	11,000	1,386 1 9	42	33 0 0	2,700 0 0	24½
Earnscleugh II.		2,929 19 1	35	83 14 6		
Manuherikia	12,000	1,847 11 13	30	61 11 17	4,800 0 0	40
Clyde	4,000	1,426 15 0	25	57 1 9	3,000 0 0	75
Molyneux Hydraulic	6,000	1,612 18 12	47	34 6 8	1,722 10 0	28
Olrig	7,000	1,604 10 19	46	34 17 15	2,443 1 0	35
Perseverance I.	14,000	2,009 2 19	44	45 13 5	8,050 0 0	57½
Perseverance II.		1,892 4 20	40	47 6 2		
Alexandra Lead	17,521	4,925 2 0	39	126 5 16	13,156 10 0	75
Fourteen-mile Beach	22,000	305 18 0	7	43 14 0	..	..
Golden River	10,000	606 17 0	16	37 18 13	1,000 0 0	10
Sailor's Bend	8 000	1,208 16 0	16	75 11 0	2,400 0 0	30
First Chance	7 000	1,191 2 4	13	91 12 11	3,150 0 0	45
Bendigo	11,000	675 0 0	13	51 18 11	..	..
New Teviot	3,500	1,062 10 5	34	31 5 0	..	..
Endeavour	10,000	846 19 2	33	25 13 7	..	..
Golden Gate	2,500	1,786 3 0	50	35 14 11	4,825 0 0	193
Golden Treasure	2,876	593 4 0	41	14 9 8	..	..
Golden Run	11,000	2,092 10 20	43	48 13 6	..	..
Ettrick	10,150	950 11 0	37	25 13 19	..	..
Otago	4,000	782 5 0	43	18 3 20	..	..
Otago II.		87 0 0	3	29 0 0	..	..
Majestic	6,500	1,088 7 0	40	27 4 4	1,687 10 0	26
Coal Creek Flat	10,000	704 7 18	40	17 12 4	..	..
Golden Bed	12,706	1,095 5 0	39	28 1 16	..	..
Molyneux Kohinoor	10,500	619 17 11	26	23 16 19	481 5 0	4½
Long Valley	9,000	286 13 0	16	17 18 7	..	..
Island Block	24,130	297 15 12	18	16 10 20	..	..
New Roxburgh Jubilee	7,500	1,450 13 17	19	76 7 0	1,125 0 0	15
Lady Roxburgh	11,000	43 16 0	3	14 12 0	..	..
New Royal Maori	1,556	607 8 8	32	18 19 15	..	..
Point d'Or	10,625	502 11 0	30	16 15 0	..	..
Electric	26,000	5,129 8 0	40	128 4 16	15,600 0 0	60
Meg and Annie	7,500	1,829 4 0	36	50 16 5	3,600 0 0	48
Junction Electric I.	26,000	3,183 14 0	41	77 13 0	5,200 0 0	20
Junction Electric II.						
Kelly and Casey	11,000	193 2 9	12	16 1 20	..	..
New Alpine Consols	7,500	499 8 2	13	38 8 7	925 10 0	12
Alpine II.	6,500	1,075 13 7	16	67 3 22	1,625 0 0	25
Grand Junction	7,710	174 12 0	6	29 2 0	..	..
Rise and Shine	12,000	1,933 1 15	38	50 17 9	300 0 0	2½
Upper Magnetic	10,800	898 12 0	18	49 18 10	..	..
Gentle Annie	8,500	633 16 22	22	28 16 5	..	..
New Half-way House	8,000	193 7 6	13	14 17 13	..	..
Hartley and Riley	6,500	2,086 2 0	26	80 4 6	4,875 0 0	75
Riley's Beach	8,650	1,834 9 0	27	67 18 20	3,460 0 0	40
Cromwell	7,000	2,816 1 3	29	97 2 2	6,125 0 0	87½
Ngapara III.	7,000	574 12 0	33	17 8 5	350 0 0	5
New Nevis	4,000	205 19 0	20	10 5 22	..	..
Prince Arthur	9,600	324 13 0	8	40 11 15	..	..
La Franchi	12,000	356 0 10	23	15 9 14	..	..
	442,111	73,427 16 4	..	..	107,506 6 0	..

I have, &c.,
F. J. BURGESS, Warden.

The Under-Secretary, Mines Department, Wellington.

Mr. Warden McCARTHY to the UNDER-SECRETARY for MINES, Wellington.

SIR,— Invercargill, 31st March, 1903.

I have the honour to report that in my district during the past twelve months mining has not been in a very prosperous condition.

Reports from Preservation Inlet have been anything but satisfactory. A certain amount of prospecting has been done at the inlet by a party of miners, and mining privileges have been applied for, which may yet turn out a rich yield. However, a large number of miners have left there, seeking fresh fields for employment.

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At Orepuki the closing down of the shale-works has caused a slump in business generally. A number of the late employees have done some prospecting for gold and taken up claims, some of whom it is reported are doing fairly well.

I regret to have to note that the Belmont dredge, owned by Mr. Francis Jack, has come to grief within a few chains of the scene intended for operations. When being removed to the lagoon at the mouth of the Waiau River, during the temporary absence of the dredgemaster, the dredge became partially lodged on a sandspit, with the result that when the water receded her back was broken. Attempts have been made to float her, but without success. She is now being unlimbered, with a view to the machinery being removed. Mr. Jack deserves credit for the perseverance and enterprise that he has displayed, and sympathy is felt for the loss he has sustained.

At West Waiau a number of miners are still at work, and, I believe, doing fairly well.

Although there is nothing very startling to report from Round Hill, still the respective companies have not had much cause to complain. Water has been plentiful all through the summer months.

I have, &c.,

S. E. McCarthy, Warden.

The Under-Secretary, Mines Department, Wellington.

WATER-RACES.

Mr. Alex. Aitken, Manager, Kumara District Water-races, to the Under-Secretary for Mines, Wellington.

Sir,— Kumara, 15th May, 1903.

I have the honour to forward the following report on the working of the Waimea-Kumara water-races for the financial year ended the 31st March, 1903.

Waimea Race.

The total sales of water from this race for the year ended the 31st March, 1903, amounted to £814 17s. 2d., and the expenditure for gauging, maintenance, and repairs for the same period was £787 16s. 7d., showing a credit balance of £27 0s. 7d. on the transactions for the year.

The average number of miners supplied with water from the race for sluicing purposes was 28·91, and the approximate quantity of gold obtained by them was 2,436 oz., having a value of £9,500 8s.

The sales of water are £85 10s. 11d. greater than during the preceding year, and the quantity of gold obtained was greater by 286 oz., having a value of £1,115 8s.

The number of miners employed in sluicing with water from the race was about the same as during the previous year.

The expenditure for gauging, maintenance, and repairs during the year was less by £51 2s. 10d. than during the preceding year, and the headworks at Kawhaka, the siphon, and all the races and branch races have been kept and are now in a thorough state of repair.

For many years the result of the working of the Waimea Race has always been a balance on the debit side, but during the past year a considerable improvement has taken place, and there is a credit balance of £27 1s. 5d. on the year's transactions, while during the preceding year there was a debit balance of £109 12s. 4d. The results would have been even better had the claims at the Stafford end of the race been of a more payable character. The most of the water sold there for some years past has been used by parties of Chinamen, and although in former years they were fairly successful and paid with great regularity, such has not been the case during the past year, which has been a bad one for them, and the receipts for water have in consequence been very considerably reduced. None of the claims, however, have been abandoned, and the holders are making fresh efforts to effect a change, in the hope of doing better in the future than in the past.

One of the parties at Tunnel Terrace, on the Goldsborough section of the race, has not been using water for a considerable portion of the year, as the old tail-race used by them had run out of fall, owing to its extreme length. A new, more straight, and consequently shorter, tail-race has been driven, boxed, and blocked, which will serve the party better than the old one for many years to come.

Water has been plentiful during the year, and no stoppages in the supply occurred, so that throughout the year the work of the miners was continuous so far as the supply of water was concerned. The miners using water from the Goldsborough section of the race seem much better satisfied with the results of their washings than in former years, and they have promptly and regularly paid for the water supplied, which is a sure sign of improved earnings.

There are still large areas of unworked ground in the neighbourhood of Tunnel Terrace, which, although not rich, will all be worked in the future, and give fairly profitable employment to a large number of miners who, on account of improved appliances, a cheap and plentiful supply of water, and a better and more efficient use of the water, will be enabled to work ground with profit that in the earlier days of gold-mining on the West Coast was considered absolutely worthless.

A claim 12 acres in extent has been taken up by Perry and party just above Tunnel Terrace. The ground was abandoned many years ago as being non-payable, and contains a large area of unworked ground with faces of auriferous wash of considerable thickness, but no sluicing on a large scale has hitherto been attempted there. The party has constructed a substantial new tail-race, properly boxed, and blocked with a gradient of 5½ in. to the box of 12 ft., and intend to sluice with twenty to twenty-four sluice-heads of water, and have also repaired and enlarged three

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dams owned by the party, in which it is intended to store night-water for use in the daytime. The party owns a very good water-race and water-right, but as their own race will not supply a sufficient quantity of water for working the claim it is intended to use a considerable quantity of water from the Waimea Race.

A new claim has also been opened up near Fox's by Burroughs and party, and they intend to use water from the Waimea Race for a jet-pump and for sluicing purposes.

The Waimea Hydraulic Sluicing Company was not a financial success although the plant and machinery was all that could be desired. The hydraulic elevator used by the company did its work in a very satisfactory manner, the piping and plant was thoroughly up to date, and the management was exceedingly good and efficient, but the yield of gold from the material put through was thoroughly disappointing. The company was entirely misled respecting the prospects and the area of ground suitable for elevating. The prospects were much misrepresented, and a very large portion of the ground that was said to be solid was found to be worked ground, out of which all the available gold had been washed many years before. The pressure of water available for the hydraulic nozzle and elevator was about 250 ft. of head, with an allowance of 30 ft. of head for friction of water in pipes, bends, and valves, which would give an effective or hydraulic head of 220 ft. The quantity of water used for sluicing-nozzle and elevator was about twelve sluice-heads, of which about four and a half heads were used through the sluicing nozzle to break down the material and carry it to the elevator, and seven and a half heads were used through the nozzle of the elevator. The average quantity of material raised to a height of 35 ft. was about 25 cubic yards per hour. The company intends making a further trial of their claim, by sluicing the gravels of the high terrace above the flat, but as there is plenty of fall to a good tailing site on the flat the hydraulic elevator will not be used, but ordinary hydraulic sluicing will be adopted.

The following tabulated statement shows the receipts and cost of the maintenance of the Waimea Race for the year ended the 31st March, 1903, together with the approximate quantity and value of gold obtained by parties using water from the race :—

Month.	Sales of Water.	Cash received for Sales of Water.	Expenditure.	Outstanding Moneys at the End of each Month.	Number of Men employed.	Approximate Quantity of Gold obtained.	Value of Gold obtained.
1902.	£ s. d.	£ s. d.	£ s. d.	£ s. d.		Oz.	£ s. d.
April	100 16 8	98 14 0	57 16 10	40 15 4	32	303	1,181 14 0
May	69 9 4	62 19 7	78 9 2	46 2 2	29	207	807 6 0
June	78 9 2	85 15 8	59 4 2	48 13 8	26	234	912 12 0
July	89 1 10	80 16 6	86 4 9	46 19 6	30	267	1,041 6 0
August	72 4 4	79 4 0	69 11 8	41 18 6	31	216	842 8 0
September	72 14 9	78 8 8	66 7 5	39 18 6	31	216	842 8 0
October	67 1 5	61 12 4	68 11 8	39 0 11	30	201	783 18 0
November	79 7 8	82 8 4	58 15 2	36 2 2	28	237	924 6 0
December	49 9 11	57 5 5	71 16 8	28 14 2	26	150	585 0 0
1903.							
January	42 2 6	53 14 7	66 6 8	28 0 5	29	126	491 8 0
February	54 13 9	39 2 11	52 8 8	32 4 9	27	162	631 16 0
March	39 6 3	37 3 9	52 2 11	33 12 3	28	117	456 6 0
Totals	814 17 2	817 5 9	787 16 7	..	28·91 (average)	2,436	9,500 8 0

Branch Race to Callaghan's and Middle Branch of Waimea Creek.

The total sales of water from this race for the year ended the 31st March, 1903, amounted to £492 11s. 1d., and the expenditure for gauging, maintenance, and repairs for the same period was £351 14s. 7d., showing a credit balance of £140 16s. 6d. on the transactions for the year.

The average number of miners supplied with water for sluicing from the race during the year was 13·5, and the approximate quantity of gold obtained by them was 1,225 oz., having a value of £4,777 10s.

The sales of water were £288 18s. 7d. greater than during the preceding year, and the approximate quantity of gold obtained was greater by 715 oz., having a value of £2,788 10s.

The average number of miners using water for sluicing from the race increased from 8 to 13·5, comparing 1901–2 with 1902–3.

The expenditure for gauging, maintenance, and repairs during the year was greater by £206 1s. 5d. than during the preceding year, and the dam in the middle branch of the Waimea Creek has been enlarged so as to store more water, and all the races and branch races have been kept and are now in a thorough state of repair.

The increased expenditure on gauging, maintenance, and repairs is accounted for by the items just referred to, by the increased demand for water, and the cost of laying on water to the several parties opening up their claims, but steps have been taken to reduce this expenditure in the future by a rearrangement of the men employed on the races.

The whole of the miners sluicing during the year with water from this race were Europeans, while during the previous year a large proportion of those using the water from the race were Chinamen who have now left the district.

In Callaghan's little or no prospecting has been done during the year, although there are large areas of ground in the locality well worth prospecting. A large area of ground has been taken up by Honey and party, and surveys have been made for the purpose of ascertaining the best method of testing and working the ground. The party intends using water from the race, but no definite scheme of working has yet been decided on.

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A large amount of work has been done during the year on the flat in the middle branch of the Waimea Creek. There are now six claims in full work, and another has completed a tail-race and will open out and start sluicing immediately. The returns from the claims now at work have been exceedingly good, and the work already done has proved beyond doubt that the whole of the flat is highly payable sluicing-ground. The depth of the ground on the flat is from 25 ft. to 30 ft., but as it approaches the hill on the south side of the flat the depth will be greater. The bottom is comparatively soft blue reef, and is very uneven, with high ridges and deep runs. In some places the runs are so deep that the present tail-races hardly bottom them. In most of the deep runs the gold is poor, and the gold-bearing wash is on a false bottom on a higher level, but in some of the deepest runs good gold at a lower level than the tail-races has been proved, and this will have to be lifted by hand-labour into the tail-races, but so far as at present known only a very small proportion of the ground will have to be dealt with in this way.

The sales of water from this race will increase considerably, and there is a fair probability that during the incoming year the sales will be nearly double that of the year just past.

The dam in the middle branch will be raised to its full height during the present year, and the men on the race will be employed in so doing during their spare time. It has been tested by floods, and a good and sufficient bye-wash has been provided which will carry off the surplus water during heavy rains.

The following tabulated statement shows the receipts and cost of maintenance of the Callaghan's and middle branch race for the year ended the 31st March, 1903, together with the approximate quantity and value of gold obtained by parties using water from the race :—

Month.	Sales of Water.	Cash received for Sales of Water.	Expenditure.	Outstanding Moneys at the End of each Month.	Number of Men employed.	Approximate Quantity of Gold obtained.	Value of Gold obtained.
1902.	£ s. d.	£ s. d.	£ s. d.	£ s. d.		Oz.	£ s. d.
April	13 0 0	5 5 0	44 6 3	11 2 6	12	33	128 14 0
May	27 7 6	34 10 0	41 12 6	4 0 0	7	67	261 6 0
June	19 0 0	26 0 0	18 0 7	0 10 0	6	48	187 4 0
July	52 17 6	24 16 0	29 16 6	26 5 0	12	130	507 0 0
August	35 2 6	42 0 0	13 0 0	20 5 0	13	87	339 6 0
September	50 0 0	59 9 0	24 2 6	10 3 2	15	125	487 10 0
October	41 18 9	12 7 6	31 8 9	38 6 3	15	105	409 10 0
November	59 7 9	83 0 0	21 15 0	28 2 6	15	147	573 6 0
December	35 4 7	13 1 3	27 0 0	36 17 4	15	88	343 4 0
1903.							
January	35 15 0	22 10 0	27 0 0	50 2 4	15	88	343 4 0
February	38 15 0	58 17 6	41 8 9	29 19 10	19	97	378 6 0
March	84 2 6	85 15 0	32 3 9	28 7 4	18	210	819 0 0
Totals	492 11 1	467 11 3	351 14 7	..	13·5 (average)	1,225	4,777 10 0

Waimea Main Tail-race.

The Waimea Main Tail-race has been extended during the year a further distance of 358 lineal feet, and its total length is now 3,030 lineal feet, exclusive of the extensions on the tailings-site. Six private tail-races are now working into the main tail-race, and another has just been completed and will be working shortly. Eight rights have now been granted by the Warden to connect with the main tail-race, and two more parties intend to apply at once for similar rights. The Waimea Main Tail-race has a gradient of 3 in. to the box (12 ft.), and all the private races should have gradients of 4 in. to the box, but this has not yet been properly regulated, and blockages sometimes occur from this cause, and also from the carelessness of parties sluicing. Everything, however, works well, and the blockages are not more frequent than in other main tail-races.

Kumara Race.

The total sales of water from the Kumara Race for the year ended the 31st March, 1903, amounted to £1,528 14s. 4d., and the expenditure for gauging, maintenance, and repairs for the same period was £1,684 16s. 6d., showing a debit balance of £156 2s. 2d. on the transactions for the year.

The average number of miners supplied with water for sluicing from the race was forty, and the approximate quantity of gold obtained by them was 3,056 oz., having a value of £11,918 8s.

The sales of water are £721 17s. 10d. less than during the preceding year, and the approximate quantity of gold obtained was less by 1,448 oz., having a value of £5,647 4s.

The average number of miners using water for sluicing from the race decreased from 46·08 to 40, comparing 1901–2 with 1902–3.

The expenditure on gauging, maintenance, and repairs during the year was less by £21 13s. 4d. than during the preceding year, and the whole of the races, branch races, and siphons have been kept and are now in a thorough state of repair. A rearrangement of the men employed on the races will reduce this expenditure in the future.

The falling-off in the sales of water is largely accounted for by the fact that several of the claims using large quantities of water were not sluicing anything like full time, as the holders were constructing new branch tail-races. Only a few of the claims worked full time, and the reduction in the sales of water will be only temporary, as most of the claims are now sluicing regularly

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Except in one instance, the ground sluiced away during the year was poor, and several claims were abandoned; but others were taken up, so that the total number of claims held is not materially reduced.

The supply of water during the year has been more than sufficient for all requirements, and no time has been lost by the miners from insufficient supply of water. During the year water was running to waste over the dams on eighty-six separate days, and during that time 123½ days' water for the whole field went to waste. Twenty holidays were observed by the miners during the year.

The attached table shows the number of days in each month on which water was running over the dams, and the total quantity lost, and also the number of holidays on which no water was used for sluicing:—

Month.	Water running over Dam.	Quantity of Water lost.	Holidays.	No Water for Channel.	Dams empty.
1902.	Days.	Days.	Days.	Days.	Days.
April	...	...	8	...	...
May	7	5	...	...	...
June	6	17¼	...	...	...
July	2	½	...	...	...
August...	3	1	...	...	...
September	3	3½	...	...	...
October	8	11½	...	...	...
November	10	11	...	...	...
December	16	20	7	...	...
1903.					
January	13	22½	5	...	...
February	9	11	...	...	...
March	9	20	...	...	...
Totals	86	123¼	20	...	...

Besides the sales of water referred to below, free water was supplied to claims as assistance for constructing new branch tail-races, &c., under authority from the Department, and also to claims having a succession of poor washings, after due inquiry was made in each case. The total value of free water so supplied was £271 0s. 10d.

Flushing-water was supplied to each of the main tail-races without charge, in accordance with authority from the Department, to the following extent: No. 2 channel, ten sluice-heads; No. 3 channel, twenty-three sluice-heads; No. 4 channel, ten sluice-heads; No. 5 channel, twenty sluice-heads. As water was plentiful quantities much in excess of the above were supplied, as it would otherwise go to waste and benefit no one, and in no case was less than the above quantities supplied.

The Borough of Kumara was supplied with water for fire-brigade purposes, and water was supplied to the miners for washing up free of charge.

The following tabulated statement shows the receipts and cost of maintenance of the Kumara Race for the year ended the 31st March, 1903, together with the approximate quantity and value of gold obtained by parties using water from the race:—

Month.	Sales of Water.	Cash received for Sales of Water.	Expenditure.	Outstanding Moneys at the End of each Month.	Number of Men employed.	Approximate Quantity of Gold obtained.	Value of Gold obtained.
1902.	£ s. d.	£ s. d.	£ s. d.	£ s. d.		Oz.	£ s. d.
April	111 16 1	48 17 6	149 17 1	884 19 5	33	224	873 12 0
May	161 7 4	126 10 0	126 9 6	925 14 8	36	322	1,255 16 0
June	108 12 10	97 16 0	126 14 6	925 13 7	36	208	811 4 0
July	120 2 10	163 10 0	140 2 10	882 6 5	36	240	936 0 0
August	142 19 3	105 10 0	140 7 7	919 15 8	36	286	1,115 8 0
September	135 11 8	144 0 0	135 2 10	911 7 4	40	270	1,053 0 0
October	101 9 10	135 11 0	121 17 0	877 6 2	40	204	795 12 0
November	133 2 9	235 13 0	158 16 3	780 10 11	43	266	1,037 8 0
December	131 17 1	17 0 0	164 3 0	889 13 0	50	264	1,029 12 0
1903.							
January	94 8 9	37 10 6	124 13 3	946 11 3	44	188	733 4 0
February	145 0 8	120 10 0	144 13 11	971 1 11	44	290	1,131 0 0
March	147 5 3	145 15 0	151 18 9	972 14 8	42	294	1,146 12 0
Totals	1,528 14 4	1,378 3 0	1,684 16 6	..	40 (average)	3,056	11,918 8 0

Waimea–Kumara Water-races.

The following tabulated statement shows the revenue, cost of maintenance, approximate quantity of gold obtained, and the number of men employed in sluicing on claims using water from

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SUMMARY showi

Water supplied.	Year.	Rate per Sluice-head per Week.	April.	May.	June.	July.	penditure.
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Water sold ..	1883–84	3 0 0	371 16 5	465 2 1	700 2 6	583 9 7	
Free	1883–84	..	46 2 6	44 5 0	183 11 8	108 19 2	..
							..
			417 18 11	509 7 1	883 14 2	692 8 9	53 5 5
Water sold ..	1884–85	3 0 0	580 4 4	937 19 4	667 3 11	906 16 10	
Free	1884–85	..	92 5 0	56 19 7	78 18 9	55 13 9	..
							..
			672 9 4	994 18 11	746 2 8	962 10 7	56 0 1
Water sold ..	1885–86	2 10 0	665 16 0	796 6 9	893 5 3	745 19 7	
Free	1885–86	..	24 13 9	9 2 0	..	..	..
							..
			690 9 9	805 8 9	893 5 3	745 19 7	54 19 5
Water sold ..	1886–87	2 10 0	758 0 4	..	..	..	
Water sold ..	1886–87	2 0 0	..	19 10 8	488 3 9	315 7 11	..
Free	1886–87	..	..	776 0 11	242 0 11	40 13 9	..
							..
			758 0 4	795 11 7	730 4 8	356 1 8	98 18 10
Water sold ..	1887–88	2 0 0	535 5 10	679 7 8	167 10 10	656 4 7	
Free	1887–88	..	26 11 8	40 19 2	15 13 9	23 10 0	..
							..
			561 17 6	720 6 10	183 4 7	679 14 7	82 12 0
Water sold ..	1888–89	2 0 0	490 6 8	338 7 7	532 1 1	626 19 10	
Free	1888–89	..	107 17 3	90 18 0	87 1 4	75 1 10	..
							..
			598 3 11	429 5 7	619 2 5	702 1 8	24 1 9
Water sold ..	1889–90	2 0 0	401 13 4	495 16 4	256 16 8	377 16 3	
Free	1889–90	..	45 15 0	55 3 4	43 0 0	92 15 0	..
Free, No. 3 Channel	1889–90	..	..	..	..	..	..
			447 8 4	550 19 8	299 16 8	470 11 3	24 13 3
Water sold ..	1890–91	2 0 0	300 12 6	355 11 11	368 3 2	423 9 0	..
Free	1890–91	..	113 5 0	119 14 2	70 7 11	71 17 6	..
Free, No. 3 Channel	1890–91	..	272 11 11	247 3 6	246 17 10	115 2 11	..
			686 9 5	722 9 7	685 8 11	610 9 5	66 4 3
Water sold ..	1891–92	2 0 0	616 5 10	655 4 11	542 9 1	179 11 11	..
Free	1891–92	..	143 11 5	191 16 8	44 3 6	..	..
			759 17 3	847 1 7	586 12 7	179 11 11	34 10 11
Water sold ..	1892–93	2 0 0	495 17 1	505 12 11	493 5 10	495 13 6	..
Free	1892–93	..	44 18 9	80 2 6	72 4 2	61 2 1	..
			540 15 10	585 15 5	565 10 0	556 15 7	32 11 0
Water sold ..	1893–94	2 0 0	451 16 5	480 13 7	541 11 11	542 9 6	..
Free	1893–94	..	101 5 2	119 5 7	99 4 6	110 7 1	..
			553 1 7	599 19 2	640 16 5	652 16 7	17 8 5
Water sold ..	1894–95	2 0 0	477 1 8	437 17 4	501 3 4	482 1 3	..
Free	1894–95	..	76 11 8	98 12 8	103 1 3	92 17 11	76 17 7
			553 13 4	536 10 0	604 4 7	574 19 2	..
Water sold ..	1895–96	2 0 0	277 5 10	379 15 0	349 12 1	322 15 10	..
Free	1895–96	..	95 3 4	96 1 8	139 19 2	81 16 3	..
Free, No. 4 Channel	1895–96	..	..	..	..	..	43 8 7
			372 9 2	475 16 8	489 11 3	404 12 1	..
Water sold ..	1896–97	{2 0 0 / 1 10 0}	286 13 4	307 0 0	166 9 6	387 13 8	..
Free	1896–97	..	100 5 0	99 4 10	22 18 2	31 1 10	..

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the whole of the water-races in the Waimea-Kumara district for the year ended the 31st March, 1903:—

Month.	Sales of Water.	Cash received for Sales of Water.	Expenditure.	Outstanding Moneys at the End of each Month.	Number of Men employed.	Approximate Quantity of Gold obtained.	Value of Gold obtained.
1902.	£ s. d.	£ s. d.	£ s. d.	£ s. d.		Oz.	£ s. d.
April	225 12 4	152 16 6	252 0 2	936 17 3	77	560	2,184 0 0
May	258 4 2	223 19 7	246 11 2	975 16 10	72	596	2,324 8 0
June	201 2 0	209 11 8	203 19 3	974 17 3	68	490	1,911 0 0
July	262 2 2	269 2 6	256 4 1	955 10 11	78	637	2,484 6 0
August	250 6 1	226 14 0	222 19 3	981 19 2	80	589	2,297 2 0
September	258 6 5	281 17 8	225 12 9	961 9 0	86	611	2,382 18 0
October..	210 10 0	209 10 10	221 17 5	954 13 4	85	510	1,989 0 0
November	271 18 2	401 1 4	239 6 5	844 15 7	86	650	2,535 0 0
December	216 11 7	87 6 9	262 19 8	955 4 6	91	502	1,957 16 0
1903.							
January	172 6 3	113 15 1	217 19 11	1,024 14 0	88	402	1,567 16 0
February	293 9 5	218 10 5	238 11 4	1,033 6 6	90	549	2,141 2 0
March	270 14 0	268 13 9	236 5 5	1,034 14 3	88	621	2,421 18 0
Totals	2,836 2 7	2,663 0 0	2,824 7 8	..	82 41 (average)	6,717	26,196 6 0

The following is a schedule of claims that have been sluicing on the Kumara goldfields during the year ended the 31st March, 1903, showing the number of men in each claim, fall and width of boxes in each tail-race, number of sluice-heads of water used in sluicing, number of cubic yards of wash sluiced away per hour, and the race from which the water was supplied:—

Name of Party.	Number of Men employed in each Claim.	Fall to 12 ft. in Tail-race.	Width of Boxes in Tail-race.	Number of Sluice-heads used in Sluicing.	Auriferous Wash sluiced away per Hour.	Race from which the Water is supplied.	Remarks.
		In.	In.		Cub. yd.		
No. 2 channel—							
Hood and party ...	4	7	24	12	84	Kumara	(Late Dillon) sluiced four months.
No. 3 channel—							
Light and party ...	4	6	22	10	60	"	Sluiced twelve months.
Brandt and party ...	3	5	22	9	45	"	(Late Neame) sluiced twelve months.
Rochford and party ...	4	8	22	10	80	"	Sluiced twelve months.
Williams and party ...	3	6	22	10	60	"	Sluiced three months.
Neville and party ...	2	5	22	10	50	"	(Late Neame No. 2) sluiced twelve months.
No. 4 channel—							
Cullen and party ...	5	7	24	11	77	"	Sluiced seven months.
Long Tunnel Company	8	7	26	22	154	Private	Sluiced ten months.
No. 5 channel—							
Burger and party ...	5	8	24	10	80	Kumara	Sluiced eight months.
Thomson and party ...	4	8	24	10	80	"	Sluiced twelve months.
Morgan and party ...	3	8	24	10	80	"	Sluiced six months.
Thorn and party ...	4	8	24	10	80	"	Sluiced nine months.
Giffney and party ...	5	7	26	11	77	"	Sluiced twelve months.
Private races—							
Pascoe and party ...	5	7	26	16	112	"	Sluiced twelve months.
Marks and party ...	3	8	24	10	80	"	(Late Bowden) sluiced three months.
Arnerich and party ...	3	8	24	15	120	"	Sluiced twelve months.

Kelly's Terrace Drainage-tunnel.

The only work done in Kelly's Terrace Drainage-tunnel by the trustees was the expenditure of £75 1s. 6d. on repairs to the tunnel and shafts. The tunnel and shafts are now in a fair state of repair, but a little work will have from time to time to be done to keep the tunnel in good working-order. One party has been engaged in prospecting during the year, but the results have not been satisfactory, although a large amount of work has been done; and another party sunk a new shaft and connected with the tunnel. The prospects obtained by them were so poor that they have since ceased work.

Kumara Deep Level.

No work of any kind has been done in connection with the Kumara Deep-level Tunnel during the year, but prospecting the deep levels has been carried on by Ryan and party from the face of the terrace near the mouth of No. 2 channel. Ryan has been getting a little gold all through the year, but he has not yet struck any wash that would pay current wages.

Wainihinihi Race.

The Wainihinihi Race has been maintained and kept in good order throughout the year, and no breaks or accidents of any kind occurred. No water was required from this race for Kumara, as there was an abundant supply without it, but it was of great service to the Waimea district, where it kept up a full supply during the period referred to.

I have, &c.,

Alex. Aitken,

Manager, Water-races.

The Under-Secretary, Mines Department, Wellington.

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Mr. R. MURRAY, Manager, Mount Ida Races, to the UNDER-SECRETARY for MINES, Wellington.

SIR,— Naseby, 20th May, 1903.

I have the honour to submit the following report on the Mount Ida and Blackstone Hill Water-races for the year ending the 31st March, 1903:—

MOUNT IDA WATER-RACE.

The total sales of water from this race during the year amounted to £1,521 16s. 7d., an increase of £311 1s. 7d. over that of last year. The expenditure on maintenance and repairs for the same period was £1,405 9s. 10d., an increase on that of last year of £8 14s. 1d. The total cash received was £1,525 0s. 9d. On account of payment in advance, free water to the value of £45 5s. was supplied. Free water to the value of £8 12s. 1d. was supplied to assist in opening up new claims, and free water for washing up was also supplied to the value of £136 5s. 1d. The total value of water supplied from this race during the year amounted to £1,711 18s. 9d. If the water distributed this year had been on the former charge of £1 10s. per head it would have been a record one since the construction of the race. The average number of miners supplied with water was 51·16, a decrease of 7·24 on that of last year. The approximate quantity of gold obtained by parties using water from this race was 2,501 oz., valued at £9,628 17s.

From the 1st April to the end of January the weather was extraordinarily boisterous and wintry; so much so that in every month there were several falls of snow on the range supplying the race—at Hill's Creek, on the morning of the 28th January, one of 6 in. On this account the season has been a very good one for water.

The miners were able to work on until the 12th July, the winter being a short one, starting again on the 27th August—forty-one days off, as compared with fifty-four the previous winter. A thaw set in on the 27th July, and I started the cleaning-out of the race on the 30th, but hard frost setting in again I was compelled to suspend the work on the 4th August. This continued until the 19th, when it started thawing, and by the 22nd I was able to make a start again, reaching the reservoir on the afternoon of the 26th. There being 54 ft. of water in the reservoir, the sluice-valves were opened, and the miners were at work on the 27th August. The thawing and freezing with the heavy falls of snow between, made the cleaning-out very heavy and more expensive especially on the high clayey gravel sidelings. By the time Ten-chain Creek was reached, in the middle of September, the weather became so rough (2 ft. of snow on the ground) that the men had to be knocked off. The upper-section man (Farquhar) was brought back on to the next section to assist Mr. Gordon in looking after it, as a lot of small slips or slides kept coming in, and in case of floods while there was such a large depth of snow along it. There has not been so much snow on the range since 1895.

During the winter the siphon in the main race across Wet Gully was replaced by new pipes, the old ones being so corroded that they could no longer stand the pressure; also several short flumes were repaired.

Four small breaks occurred in the race during the year, the outside of the race being very weak. Where one break occurred a short deviation was made, thus straightening the race. It was also necessary to extend the cleaning and widening of a short length of the Spec Gully branch race, to give Mr. F. Hore a suitable position for the head of his hydraulic-elevating pipes.

The number of days on which no water was supplied to the miners was winter forty-one, Christmas one, New Year one, Good Friday one—a total of forty-four, as compared with sixty-four last year.

Nineteen elevating claims have been at work in the district during the year, thirteen constantly. Nine of these are supplied by the Government race, and all I believe are doing fairly well. Of the other six it was found, after working for some time, that the ground did not pay. These claims were therefore abandoned. Four of them were supplied from the Government race.

There are six parties working in the "Maori bottom"; all of them are, I believe, making small wages, but the want of pressure is very much against them, as the ground is very tight.

During the year the Wedderburn siphon has been constructed, cutting off four miles and a half of very bad race and loss of water from percolation, also the dam in Home Gully, with the branch race leading from it. In the construction of the Wedderburn siphon the old telescope siphon (13 chains) near the head of the creek was utilised, a half being placed at each end of the new flanged pipes, thus relieving them of the heavy pressure, the iron in them being only 12 gauge.

BLACKSTONE HILL WATER-RACE.

The total sales of water from this race during the year amounted to £60 3s. 3d. The total cash received was £60 3s. 3d., a falling-off in sales and revenue on that of last year of £18 1s. 3d. This is accounted for by C. Rose ceasing to take water from the 1st May to the end of August, and the time the race was being cleaned out. The total cost of maintenance and repairs was £17 4s.

From the cleaning it has had this year very little should require to be done to it for the next two years.

There have been only two parties (the same number as last year), R. Johnston and C. Rose using water from it. Like the Mount Ida Race, it had a plentiful supply during the year.

I have, &c.,

R. MURRAY, Manager.

The Under-Secretary, Mines Department, Wellington.

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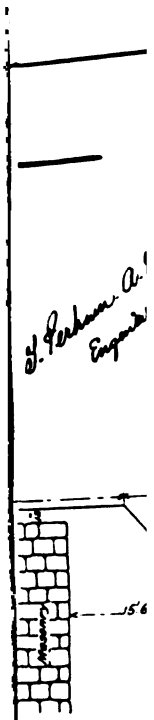

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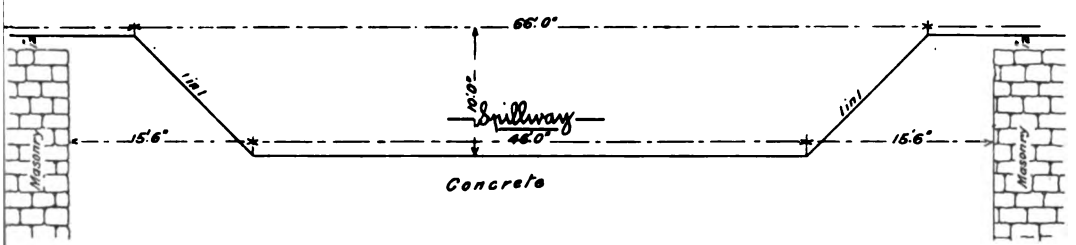
Drawing No2.

W. Perkins. A.M. Inst C.E.
Engineer Water Conservation
22/5/1903.



Front Elevation of crest of Dam

The 2 feet layer of cement concrete at back and over the crest of the spillway, and slope of wingwalls as shown on the back elevation, is to be continued from the top of each wingwall down over the masonry on the same plane as in the body of the Dam until it reaches the rock sides of the gorge.

Method of construction of Dam.

avating and removing from the sides and bed of the Gorge all surface material and loose overhanging rock down pied by the Dam to be excavated and stepped to the dimensions shown (or as shall be directed) great care being taken to k.

e of solist rock, quarried from the cliffs in the Gorge immediately above the site, and the stones used of the largest descrip. d front of the Dam to be laid carefully with Portland cement mortar, beds and joints bonded.

e laid together in courses, and all spaces filled in with smaller stones and packed with spalls, so as to form as near as After building up this material together with the outer walls for 2 to 3 feet, grouting boxes to be placed upon the wall, e and stones to be carefully grouted with liquid cement, thereby insuring all horizontal and vertical joints being into one solid mass.

on the down stream or front of the Dam, but left in the rough A layer of strong Portland cement concrete, averaging de or back of the Dam, and over the crest of the Spillway in a curved surface, and down to the foot of the Dam on e to be held in place by iron rods built into the masonry courses as the work progresses. The batter of the down crete to be formed by stepping back the stones as the wall is built up, and left rough for the better adhesion of the Dam, extent of masonry and concrete, and all details of through outlet pipe, etc. are here shown in elevations, g: An apron of heavy stones to be placed along toe of down stream slope.

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WATER-CONSERVATION.

Mr. T. PERHAM, A.M.Inst.C.E. to the UNDER-SECRETARY for MINES, Wellington.

SIR,— 4th June, 1903.

I have the honour to forward my report for the financial year ending the 31st March, 1903.

NORTH ISLAND.

No further action has yet been taken with the extension of the Mackaytown reticulation or Golden Cross and Waikino domestic-water supplies.

Mention was made in my report for 1901 of certain complaints by the Maoris residing in the neighbourhoods of Paeroa and Te Aroha, on the banks of the Ohinemuri River, as to the impurity of the water by the discharge of the cyanide slime from the works at Waikino and Karangahake. It was represented at the time that the Natives had a strong claim for a water-supply, as previous to the introduction of mining the river-water was pure and in constant use by them. I then recommended that if it could be proved by analysis that the water had been fouled by the workings in connection with mining, a remedy might be obtained by drawing a supply from the Paeroa water system, and, if required, also from the Te Aroha water-works, both of which are fully equal to the demand if strict regulations can be enforced with regard to waste—a contingency likely to occur.

SOUTH ISLAND.

The West Eweburn Storage-reservoir, near Naseby, was in good working-order when I inspected it in January last. The seepage referred to in my last annual report had entirely taken up, and the water risen to within 5 ft. of the by-wash—that is, a depth of 60 ft. from the datum point in the creek-bed. Mr. Murray, the manager of the Government water-races, had for some time previous been working with the outlet-valves nearly closed, only about six to seven heads being allowed to run off. His object was to store as much water as possible pending the contemplated removal of the old siphon-pipes across the head of the Wedderburn Valley. These pipes have now been connected to the new middle portion of the half-mile of 27 in. pipes lower down the valley, thus cutting off nearly five miles of ditching which was very expensive to maintain. Mr. Murray reports the completion of the siphon, and that it is working in a satisfactory manner. I am of opinion that the money expended on this work has been well spent. The country over which the race originally ran was of so rotten and unstable a character that a heavy annual expenditure in the maintenance of this length of race would certainly have to be met. This expense is now obviated.

There are some other smaller sections on this race (Mount Ida) which should be treated in the same way, and thus reduce annual up-keep, but now that the race has been straightened and enlarged between the Wedderburn, West Eweburn, and Naseby any other improvements can stand over until such become necessary from sudden floods, &c.

Home Gully Reservoir.

The earthen dam for this was practically finished last February, and the short branch race cut through somewhat hard ground to meet the supply-race running into the siphon crossing the main road to the spur on which the race runs to serve the majority of the elevating claims down the eastern side of the Hogburn. That the value of this conservation to miners working on the eastern terraces and in the Hogburn Gully below Naseby may be clearly understood, I may explain that it has been the custom hitherto to turn the water into the small reservoir above from the branch race every Saturday night, and store it for use until the following Monday morning. The storage was, however, quite inadequate to the demand, and it was impossible to prevent a large quantity from running to waste during the thirty-six idle hours; hence the construction of the dam, which is now, together with the 6 chains of branch race, completed at a cost of £1,025. The dam has been well and cheaply constructed by co-operative labour, and will be valuable in supplying the miners on the eastern side of the Hogburn with water-power not only for carrying on the present operations, but breaking new ground which for want of a larger body of water has not been hitherto worked but actual prospecting has shown to be payable.

The sludge-channels surveyed on the Charlton Creek at Gore and on the Waimumu Stream near Mataura—both discharging into the Mataura River—are now in course of construction. In addition to disposing of the dredging-tailings, these channels will be of considerable value in draining the rich agricultural land in the neighbourhood.

The Idaburn Irrigation Reservoir.

Instructions were issued by the late Hon. Minister of Mines, the Hon. A. J. Cadman, for an examination of the Ida Valley, with the object of irrigating the most arid portions, and an advantageous site was selected for a dam at the entrance to the Idaburn Gorge. The extension of the Central Otago Railway to the Poolburn, however, ran right across the intended bed of the reservoir, and another site was eventually decided on at the extreme end of the gorge. The storage, although not of so great extent, will be quite equal to irrigating the portion of the valley consisting of about 10,000 acres north of the Poolburn. Working-drawings of the locality and a masonry dam have been prepared, replicas of which I forward herewith.

At the latter end of January I left Wellington for the West Coast to conduct the survey of the incline tramways in connection with the works of the State coal-mine at Point Elizabeth, near Greymouth. Six trial lines were run for the purpose of ascertaining the best route to adopt from the tunnels to the bins, and the one selected is now being cleared of timber for the work of construction.

I have, &c.,

T. PERHAM, A.M.Inst.C.E.,
Engineer, Water-conservation.

The Under-Secretary, Mines Department, Wellington.

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MINE-MANAGERS' AND BATTERY-SUPERINTENDENTS EXAMINATION PAPERS

Questions used in Examination of Mining Managers for Certificates.

Subject A.—*The Laying-out and Construction of Shafts, Chambers, Main Drives or Levels, Adits, Uprises, and Stopes.*

1. State your experience in mining, and give the name of the mine or mines you were employed in during the last five years.
2. If it were known that a quartz lode was payable for working to a depth of 1,200 ft., and that the lode was underlying to the westward 67 degrees from the horizon, where would you sink a shaft to work the lode? Give your reasons fully.
3. In sinking a rectangular shaft, (*a*) what precautions would you take to keep it plumb? (*b*) state the necessary surface-work required if it had to be sunk to a depth of 300 ft.
4. Describe how you would open up levels from a shaft. Give the dimensions of a chamber you would construct if thirty men were employed on each level. State your reasons fully.
5. Give the dimensions of passes and their distance apart to work a lode 7 ft. wide, and state reasons for same.
6. Show by sketch how you would stope a lode, and also describe how you would protect the workmen from danger in travelling up and down passes.
7. In driving a level in hard ground requiring explosives, describe how you would commence to drill holes in a vertical face so as to obtain the best effect from the explosive force, assuming the level to be 5 ft. wide and 7 ft. high.

Subject B.—*On the Timbering of Shafts, Adits, Main Drives or Levels, Passes, Stopes, and generally on the Systems of Timbering Mines, and also in Filling up Old Workings.*

1. Show by sketch how you would fit timber for main adits, and also for a rectangular shaft, giving all dimensions.
2. Describe how you would timber a rectangular shaft through heavy swelling ground. Give dimensions of timber, state how you would fit it, and also the size of compartments.
3. If you were constructing a pumping and winding shaft where two lifts of pumps were used, the plunger being 16 in. in diameter and the draw-lift of same dimensions, state the minimum dimensions of pumping-compartments required at the change of lifts; also state how you would timber the shaft, and give your reasons for same.
4. Describe how you would proceed to open out a chamber from a shaft in heavy swelling ground, and how you would secure it with timber; also give the dimensions of chamber you would construct if forty men had to be employed on that level in the mine.
5. If you were sinking a shaft through quicksand, and had to secure it with timber, describe fully how you would do it.
6. Show by sketch and describe fully how you would timber stopes where the lode is 5 ft. in thickness and underlying at an angle of 60 degrees from the horizon.
7. How do you ascertain the strength of timber required for any particular piece of work? Given a round cap of kauri 14 in. in diameter with 8 ft. between its supports, show by calculation its breaking-strain and also its safe load.

Subject C.—*Ventilation of Mines and Composition of Gases.*

1. Give the composition and specific gravity of H_2S and CO. Describe their characteristics, the means of detecting them, and their effects on the human system.
2. What is meant by "the diffusion of gases"?
3. Describe the various methods of producing reliable air-currents in mines.
4. A fan is circulating 100,000 cubic feet of air per minute at 1·5 in. W.G. Allowing 15 per cent. of the power given out by the engine for frictional resistances, and the efficiency of the fan to be 50 per cent. of the useful H.P. of the engine, what H.P. would have to be indicated by the engine when the fan is circulating 200,000 ft. per minute, the airways remaining unaltered.
5. Show how you would conduct the air through the underground workings of an alluvial mine shown on sketch-plan accompanying.* State what ventilating-power you would adopt, and show where you would apply it.

The alluvial deposit is lying horizontal, and yields CO_2 freely.

Subject D.—*Tapping Water in Mines, and Mode of Constructing Dams in underground Workings to keep back the Water.*

1. In driving, a borehole from abandoned and closed workings at a higher level is met with and a feeder of water (approximately equal to one-fourth of the carrying-capacity of the bore) liberated. Depth of borehole, 400 ft. For 20 ft. above the heading the ground is of a soft nature with a covering of hard rock. How would you proceed to keep back the flow of water?
2. Describe the construction of (*a*) wood, (*b*) brick, and (*c*) concrete dams in underground workings, and compare their relative merits.
3. What general precautions would you adopt in approaching old workings full of water, and what provision would you make to prevent the stoppage of mining work in the event of the water from the old workings coming away in greater volume than anticipated?
4. A dam across a roadway 5 feet wide and 7 feet high is keeping back water having a vertical height of 110 ft. above bottom of dam. What is the total pressure on the dam?

* Plan not reproduced.

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SUBJECT E.—*On Blasting and the Use of Explosives.*

1. Show by sketch how you would bore holes for blasting in hard, compact rock in the face of a main level the dimensions of which are 5 ft. 6 in. wide and 6 ft. high. Describe fully how you would fire the different holes to give the best results.
2. If you were blasting in the bottom of a shaft where a pump was employed, what arrangements would you make before firing shots?
3. Give the comparative strengths of dynamite, blasting-gelatine, and blasting-powder; also state the weights and comparative strength of these if a borehole 1¼ in. in diameter were charged to a depth of 10 in. with each explosive,
4. Describe how you would prepare a charge and fill the borehole if you were using blasting-powder and had to fire the charge in very wet ground.

SUBJECT F.—*A Knowledge of Arithmetic and the Method of keeping Mining Accounts.*

1. The distance driven on two levels on a lode is 240 ft., the height of backs between the levels is 1,000 ft. perpendicular, but the lode has an underlie of 23 degrees from vertical, and has an average width of 2 ft. 10 in. at one end and 5 ft. 8 in. at the other end. How many tons of ore is there between the two levels, taking 15 cubic feet to a ton?
2. From 2,000 tons of quartz 1,104 oz. 11 dwt. of bullion was produced of 0·5334 fine in gold. Find the value of the gold, taking pure gold to be worth £4 4s. per ounce. Also give the value per ton of quartz.
3. The wages for twelve days in a mine was £900 where a hundred men were employed in trucking and repairing roads and forty men on surface. The hundred miners got four and a half times as much as the forty men on surface, and the forty truckers got seven-eighths of the wages the forty men on surface got. How much did each man receive?
4. If twelve men and seven boys did a certain piece of work in forty hours, how long would five men and four boys be in doing the same work, allowing that four boys did work equal to three men?
5. If you purchased twelve picks at 3s. 4½d. each, twenty-four shovels at 4s. 7½d. each, and 115 lb. powder at 7½d., state the total amount of purchase.

SUBJECT G.—*A Knowledge of Part V. of "The Mining Act, 1898."*

1. To what extent is it lawful to carry on mining operations without having a certificated manager in charge?
2. What are the general provisions respecting ventilation?
3. Name the requirements of the Act regarding plans.
4. What are the conditions under which explosives may be stored and used in a mine?
5. State clearly the provisions of the Act in respect to signalling in shafts, underground planes, and alluvial workings.
6. What report-books have to be kept at a mine, and who is to sign them?

SUBJECT H.—*Pumping Appliances and the Drainage of Mines.*

1. To what extent may a siphon be used in mine-drainage, and what conditions affect its efficiency?
2. What is the reason for the slow rate of speed at which bucket and plunger pumps ordinarily travel? How is it possible to work pumps with safety at a high rate of speed?
3. Describe the centrifugal pump, and show how far it is applicable to mine-drainage.
4. Assume an engine working two pumps each having a stroke of 6 feet. One is a 10 in. plunger pumping from a depth of 300 feet. To equalise the load on the engine, what is the required diameter of the other pump working from a depth of 200 feet only?
5. What H.P. is necessary to raise 12,000 gallons of water per hour to a height of 300 feet?

SUBJECT I.—*The Haulage in Shafts and on Underground Planes; also the Strength of Haulage Ropes and Chains.*

1. Describe the leading features of a modern winding-plant for a deep shaft where a large output has to be raised.
2. It is required to wind 25 tons of ore per hour from a depth of 400 feet. Boiler-pressure, 80 lb. per square inch; drum on second-motion shaft. Give diameter of cylinders, length of stroke, ratio of gearing, and diameter of drum.
3. Under what conditions are the so-called "safety-catches" (designed to arrest the cage in the event of a rope breaking) a source of danger in winding?
4. What effect has shock and vibration (incidental to winding operations) upon the coupling-chains, pins, shackles, &c., by which the ropes and cages are connected? How would you guard against accidents which are liable to occur as the result of shock and vibration?
5. Describe the best method of lowering 50 tons of ore per hour down an incline tramway half a mile long having a grade of 1 in 5. State breaking-strain, weight, and circumference of rope suitable for the work.

SUBJECT J.—*The Effect that Faults, Slides, and Mullock-bars have on Lodes, and how to ascertain the Direction of Slides and Heavals.*

1. Describe five dislocations of lodes from your own experience, with diagrams and full particulars of how they were overcome.

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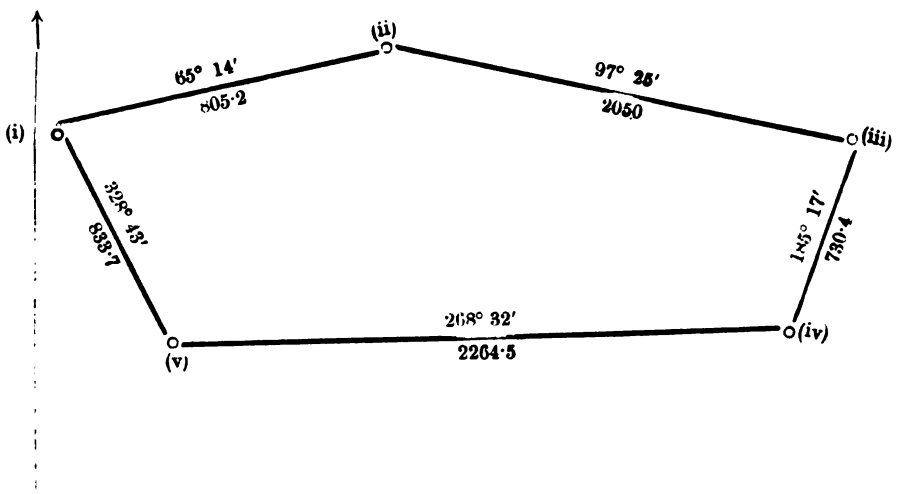
SUBJECT I.—*A Knowledge of the different Rocks where Gold, Silver, Tin, Copper, Zinc, Lead, and Antimony are found, and the Formation of Lodes and Leads.*

1. Where and in what forms are gold and silver found in New Zealand? Describe a gold-dredging plant in detail.

SUBJECT K.—*A Knowledge of Underground Surveying, and of making Plans of the Underground Workings, showing the Dip or Inclination and Strike of the Reefs or Lodes.*

1. For the purpose of undertaking the survey of underground workings in a mine, how would you transfer the true bearing from the surface by means of a deep shaft?

2. Compute and tabulate the traverse shown upon the following diagram, giving the total distances of each station on the meridian and perpendicular referred to station (i) as zero. The distances are given in links.



3. Describe a simple and effective manner of collimating the horizontal wire in a dumpy level.

4. Describe your method of ascertaining the dip or inclination and strike of reefs or lodes.

5. Describe the different kinds of mining claims, and state generally their form, area, and how they should be marked on the ground.

6. The candidate will be required to undergo an oral examination by the examiner, including questions as to the use and adjustment of the theodolite and other instruments.

QUESTIONS TO BE USED IN EXAMINATION OF BATTERY-SUPERINTENDENTS FOR CERTIFICATES.

SUBJECT A.—*The Different Modes of Reducing and Pulverising Ores.*

1. State fully where you have been employed during the last two years, giving the dates, and names of your employers, and nature of such employment.

2. Describe fully how you would construct a complete crushing-plant, with twenty stamps, and everything necessary to extract the bullion from the ore and have it in bars ready for market. Also give the relative heights of the different portions of the plant above the ground-floor.

3. Show by calculation the diameter of the cylinder of a steam-engine required to drive twenty stamps, ninety-five blows per minute, having a drop of 7 in., the head of each stamp and shoe being 2 ft. high and 8½ in. in diameter, the stem 15 ft. long and 3 in. in diameter, the tappet being 114 lb.; the steam entering the cylinder at 100 lb.-to-square-inch pressure, and cut off at three-eighths of the stroke.

4. Show by calculation the diameter of nozzle required to work a Pelton water-wheel so as to give forty effective horse-power; the head of water on the nozzle being 160 ft.

5. Describe a Huntingdon and also a Krupp crushing-mill, their size and capacity, the horse-power required to work each, and also the most economical speed to work them at.

6. What mesh of grating would you use in a stamp mill if the gold was finely divided amongst the ore-gangue, and give your reason for same.

SUBJECT B.—*Amalgamating-machines.*

1. Show by sketch a McKay pan, also a Watson-Denny pan. Describe fully the speed each pan requires to be driven, the quantity of quicksilver required for amalgamation in those pans, the quantity of ore they will treat in twenty-four hours, and the horse-power required to work them.

2. Give the dimensions of a settler; explain fully its use, and the method of working it.

3. Describe fully how you would construct a plant of twelve berdans—the method of feeding, the quantity of quicksilver you would use in each berdan, the quantity of ore they would treat in twenty-four hours, the speed you would work them at, and the horse-power required to work them.

4. Give your experience with working concentrators; explain fully their use, how they are worked, their speed and capacity; also the class of ore requiring concentration.

5. Show by sketch how you would construct amalgamating-tables, giving all dimensions of a table suitable to take the pulverised ore from five heads of stamps. Describe fully.

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SUBJECT C.—*Quicksilver, and the Methods of using it in connection with the Extraction of Gold and Silver from Ores.*

1. State the quantity of quicksilver you would use in each of the following amalgamating-machines—namely, Berdan-McKay pan, Watson-Denny pan, and combination pan—and give your reasons for same.
2. State fully the process you would use for removing antimony, lead, tin, or copper from quicksilver, and the effect that these metals have on its amalgamating properties.
3. Describe how you would clean and coat copper plates with quicksilver, also how you would always keep plates coated and the quicksilver in a lively condition.
4. Describe fully how you would remove the bullion from plates and machines and make it in a marketable condition.
5. In making a final clean-up at a mill, how would you remove all bullion from the copper plates? Describe fully.

SUBJECT D.—*Cyanide, Chlorination, and other Chemical Processes of recovering Gold and Silver from Ores.*

1. Describe fully how you ascertain the strength of cyanide-solutions. Also, how do you ascertain the strength of solution required for the ore you have to treat?
2. Describe fully how you proceed to make up stock solutions, and the strength of same.
3. Show by calculation how many tons of stock solution containing 19 per cent. of KCN would be required to make up 15 tons of sump solution containing 0·012 per cent. of KCN to a 0·25-per-cent. solution.
4. How many pounds of crude salt containing 76 per cent. KCN is required to make up 30 tons of a solution of 0·26 per cent. KCN?
5. How many tons of 0·3 per cent. of KCN would 4 tons of 9-per-cent. solution of KCN make, using water for dilution?
6. How many tons of 0·25-per-cent. solution of KCN would 2½ tons of 15-per-cent. solution make, using a sump solution of 0·01 per cent. KCN?
7. A vat is 30 ft. in diameter and 6 ft. deep; it is filled with pulverised ore to a depth of 4 ft. 3 in.: how many tons does it contain?
8. Show by sketch a modern cyanide plant capable of treating 80 tons of ore per day, with description in full of the different parts.
9. Describe fully the remedies you would apply if any of the workmen showed signs of cyanide-poisoning.
10. Describe step by step how the ore-vats are filled, how the KCN solution is applied, and how the solution is drained off and disposed of.
11. Describe fully the difference between a chlorination and a cyanide plant, and how the bullion is recovered by each process, and how it is made into a marketable condition.

SUBJECT E.—*Sampling and Testing of Ores.*

1. Half a hundredweight of lode-stuff is submitted to you: describe the methods, step by step, that you would follow for its examination with the view of determining its value as an ore for gold, silver, copper, lead, or zinc.

SUBJECT F.—*Knowledge of Arithmetic and Method of keeping Battery Accounts.*

1. Give the value of 1,875 oz. of bullion of 0·3675 in gold, it being alloyed with silver—taking pure gold at £4 4s. per ounce and pure silver at 2s. 4d. per ounce.
2. If nine men and seven boys did a certain piece of work in seventy hours, how long would it take five men to do the same work, allowing that each boy did five-sevenths of a man's work?
3. If you had £150 to pay for four weeks' wages to seven men in a battery, five men in connection with a cyanide plant, and two men in the assay-office, and each of the seven men engaged in the crushing operation got seven-eighths of the wages that each man got in the cyanide, and each of the men in the assay-office got three-quarters as much as each man in the cyanide plant, how much did each man receive?
4. Give the value of 119 oz. 12 dwt. 12 gr. of 0·7452 fine, taking the pure gold to be worth £4 4s. per ounce.
5. Give a specimen of how you would keep books by double entry.

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LIST OF MINE-MANAGERS AND BATTERY-SUPERINTENDENTS WHO HAVE OBTAINED CERTIFICATES UNDER THE MINING ACTS.

As there have been several inquiries made as to the names of persons who hold certificates as mine-managers and battery-superintendents, the annexed is a complete list of those holding certificates at the date of this report, taken from the register:—

THE MINING ACT.

FIRST-CLASS SERVICE CERTIFICATES.

Issued under "The Mining Act, 1886," without Examination.

Adams, H. H., Waiorongomai.
Anderson, P., Thames.
Andrews, R., Coromandel.
Andrews, T., Thames.
Barclay, T. H., Thames.
Bennett, J., Alexandra.
Benney, J., Coromandel.
Black, T., Waiomo.
Bollersley, N., Boatman's.
Bradbury, M., Reefton.
Bray, John, Lyell.
Burch, W. H., Thames.
Byrne, J. F., Stafford.
Cameron, A., Macetown.
Cameron, E., Te Aroha.
Chapman, J. A., Dunedin.
Clarke, G. S., Thames.
Comer, R., Thames.
Conradson, M., Lyell.
Corin, W., Thames.
Cornes, C. A., Karangahake.
Coutts, J., Thames.
Crawford, T. H., Thames.
Crowley, C., Reefton.
Cummings, W., Reefton.
Davis, J. E., Queenstown.
Davey, C., Ross.
Donald, J., Cromwell.
Dryden, S. Thames.
Dunlop, T. A., Thames.
Edwards, J., Skipper's.
Elliott, J., Macetown.
Evans, F., Skipper's.
Evans, J. H., Skipper's.
Fitzmaurice, R., Reefton.
Frewen, J. B., Queenstown.
Gavin, T., Te Aroha.
Gilbert, J., Reefton.
Gilmour, T., Thames.
Giles, G. F., West Wanganui.
Glass, W. M., Naseby.
Goldsworthy, J., Waiorongomai.
Greenish, J., Reefton.
Greenville, W., Ohinemuri.
Hall, J. P.
Hansen, P. C., Thames.
Harris, J., Owen's Reefs.
Harrison, R. H., Coromandel.
Hicks, T. B., Thames.
Hilton, G. P., Bendigo.
Hodge, F., Coromandel.
Hollis, W., Thames.
Hunter, R., Thames.
James, F., Thames.
Jamieson, A., Coromandel.
Jenkins, M., Wakatipu.
Johnstone, H., Bluespur.
Julian, J., Boatman's.
Kelly, J., Lyell.
Kerr, J., Thames.
Lawn, E., Black's Point.
Lawn, H., Boatman's.
Lawn, J., Reefton.
Littlejohn, W., Karangahake.
Lowe, E. W., Thames.
Malfroy, J. M. C., Ross.
Martin, W. G., Thames.
McCallum, J., Reefton.
McCullough, R., Thames.
McGruer, G. N., Karangahake.
McIlhaney, J., Thames.
McIntosh, D., Bluespur.
McKay, J., Ross.
McKenney, J., Reefton.
McKenzie, W., Thames.
McLeod, G., Coromandel.
McLiver, F., Thames.
McLiver, H., Thames.
McMaster, J., Reefton.
Moore, H. W., Thames.
Moore, J. H., Thames.
Morgan, R., Otago.
Morrisby, A. A., Glenorchy.
Nasmyth, T., Reefton.
Newman, W., Naseby.
Northey, J., Thames.
O'Sullivan, D. E., Thames.
Polton, A., Karangahake.
Porter, J., Waipori.
Purvis, G., Ross.
Quinn, E., Te Aroha.
Radford, T., Thames.
Ralph, J. G., Thames.
Ranger, J., Reefton.
Rasmussen, C. L., Mokihinui.
Rasmussen, C. P., Mokihinui.
Reid, P., Coromandel.
Resta, L., Macetown.
Roberts, E., Ross.
Rooney, F., Reefton.
Scott, T., Waiorongomai.
Searight, A., Reefton.
Senior, J., Thames.
Smith, J. E., Thames.
Stone, F., Karangahake.
Steedman, J. B., Thames.
Sturm, A., Waipori.
Taylor, N., Thames.
Todd, C., Heriot.
Treloar, J. S., Reefton.
Tripp, R. S., Arrowtown.
Vivian, J. G., Thames.
Vivian, S., Reefton.
Waite, C. D., Thames.
Waite, E., Thames.
Walker, J. W., Thames.
Watson, T., Reefton.
Wearne, J. E., Endeavour Inlet.
Wearne, T., Endeavour Inlet.
Wilcox, J., Thames.
Williams, J., Skipper's.
Wright, G., Boatman's.
Wylie, W., Ross.
Young, G., Skipper's.

First-class Mine-managers' Certificates, issued after Examination, under "The Mining Act, 1886," and Amendment Acts.

Adams, B., Thames.
Baker, W., Thames.
Black, G., Reefton.
Caples, P. Q., Reefton.
Carter, J., Thames.
Casley, G., Reefton.
Cochrane, D. L., Reefton.
Colebrook, J. D., Coromandel.
Coombe, J., Reefton.
Crawford, J. J., Thames.
Cummings, W., Reefton.
Donaldson, W., Otago.
Fleming, M., Thames.
Gardner, W. P., Reefton.
Harris, W., Thames.
Horn, G. W., Thames.
Horne, W., Coromandel.
Hornick, M., Thames.
Hosking, G. F., Auckland.
Kruizenza, W., Reefton.
Lawn, T., Reefton.
Logan, H. F., Wellington.
Mangan, T., Thames.
Mouat, W. G., Dunedin.
Truscott, G., Thames.
Watkins, W. E., Reefton.
Wilkie, J., Reefton.

First-class Mine-managers' Certificates, issued on Production of Certificate from a Recognised Authority outside the Colony, under "The Mining Act, 1886," "The Mining Act, 1891," and "The Mining Act, 1898."

Argall, W. H., Coromandel.
Beckwith, L. H., Wellington.
Datson, J., Manaia.
Griffiths, A. P., Auckland.
Griffiths, H. P., Auckland.
Hailey, R. C., Dunedin.
McKenna, Thomas, Dunedin.
Molineaux, H. S., Gore.
Rich, F. A., Auckland.
Williams, W. H., Auckland.

First-class Mine-managers' Certificates, issued after Examination, under "The Mining Act, 1891."

Agnew, J. A., Thames.
Annear, William, Reefton.
Bennett, E. P., Thames.
Boydell, H. C., Coromandel.
Bradley, R. J. H., Te Puke.
Bray, E., Thames.
Bruce, Malcolm, Thames.
Carroll, J., Lyell.
Cartwright, E., Thames.
Crabb, J., Reefton.
Dobson, J. A., Auckland.
Evans, H. A., Wellington.
Fahey, P., Reefton.
Flannigan, Francis, Reefton.
Gilmour, J. L., Thames.
Hodge, J. H., Thames.
Hughes, D., Thames.
James, T., Thames.
Keam, P. E., Thames.
Lane, J., Reefton.
Lawn, C. H., Capleston.
Linck, F. W., Thames.
Marshall, F., Reefton.
Morrison, R., Thames.
McDermott, J., Thames.
McDermott, G., Thames.
McDermott, W., Thames.
McGregor, W. T., Thames.
McKenzie, H. J., Coromandel.
McPeake, J., Thames.
O'Keeffe, M. D., Thames.
Paul, Matthew, Thames.
Paltridge, Henry, Thames.
Prince, F. H., Reefton.
Robertson, D. B., Stafford.
Ross, Richard, Thames.
Russell, Murray, Dunedin.
Shepherd, H. F., Thames.
Stanford, W. J., Macetown.
Steedman, J. G., Thames.
Sutherland, Benjamin, Reefton
Tierney, R., Thames.
Vialoux, F., Coromandel.
Warne, George, Thames.
Waters, D. B., Skipper's.
Watt, J., Thames.
White, G. H., Thames.
Whitley, A., Thames.
Williams, C., Capleston.

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FIRST-CLASS SERVICE CERTIFICATES AS MINE-MANAGERS—*continued.*

First-class Mine-managers' Certificates, issued after Examination, under "The Mining Act, 1898."

Arscott, R., Waihi.
Allen, Henry, Waihi.
Barker, B., Thames.
Bennie, Boyd, Waihi.
Blenkhorn, C., Coromandel.
Bolitho, Joseph, Reefton.
Bower, J. W., Coromandel.
Carroll, A. M., Reefton.
Carter, R. P., Waihi.
Clouston, R. E., Kaitangata.
Cooper, J. H., Thames.
Cooper, Thornhill, Waihi.
Cordes, F. M., Karangahake.
Docherty, W. H., Coromandel.
Ellery, John, Reefton.
Evered, N. J., Waihi.
Fry, S., Waimangaroa.
Goldsworthy, C., Karangahake.
Hooker, John, Coromandel.
Hitchcock, W. E., Barewood.
Irwin, Samuel, Waihi.
Jackson, G. T., Waihi.
Johnson, J. H., Coromandel.
Langford, G. S., Waihi.
Lawn, Nicholas, Reefton.
McConachie, W., jun., Waihi.
MacDuff, R. B., Thames.
MacLaren, J. A. J., Coromandel.
McMahon, J. H., Reefton.
McMahon, T., Reefton.
Morrison, William, Waihi.
Moye, Michael, Reefton.
Stewart, F., Waihi.
Thomson, Thomas, Waihi.
Tucker, E. S., Coromandel.
Turnbull, E. V., Coromandel.
Turner, C. E., Murchison.
Webber, J. H. A., Reefton.
Weir, Thomas, Waihi.
Whyte, N. McG. H., Waihi.
Wood, P. H., Reefton.

First-class Mine-managers' Certificates, issued under Section 313 of "The Mining Act, 1891."

Edwards, George, Westport.
Hornibrooke, H. P., Coromandel.
Martin, James, Reefton.
Rickard, John, Thames.
Snow, Thomas, Huntly.
Thomas, James, Thames.
Trelease, J. H., Thames.
Williams, John, Kuaotunu.
White, John S., Karangahake.

First-class Mine-managers' Certificates of Competency granted to Holders of Provisional Warrants under Section 32 of "The Mining Act Amendment Act, 1896."

Alexander, Thomas, Deep Creek.
Argall, A. E., Coromandel.
Battens, H., Coromandel.
Begley, Thomas, Reefton.
Bennett, Charles Henry, Kuaotunu.
Bunney, Joseph, Waihi.
Campbell, Alexander, Cullensville.
Carlyon, Samuel, Coromandel.
Cornes, C. A., jun., Karangahake.
Daldy, Edward Arthur, Coromandel.
Draffin, Samuel, Waitekauri.
Farmer, C. S., Waitekauri.
Goldsworthy, Thomas, Tokatea.
Goldsworthy, William, Karangahake.
Govan, Joseph, Thames.
Harvey, A. G., Coromandel.
Howard, Samuel, Karangahake.
James, Robert, Thames.
Jamieson, John, Reefton.
Johns, Thomas, Waihi.
Kennerley, W. H., Thames.
Langford, James, Coromandel.
McCombie, John, Karangahake.
MacDonald, H., Coromandel.
McEnteer, James, Tararu.
McFarlane, Charles M., Tokatea.
McLean, Benjamin J., Waitekauri.
McLean, Charles, Thames.
McLean, James, Tararu, Thames.
Meehan, James, Westport.
Moorecraft, Walter, Coromandel.
Morgan, William, Owharoa.
Moyle, Thomas, Thames.
Patton, William, Macetown.
Pearce, Francis, Reefton.
Potter, William H., Thames.
Rabe, Henry, Karaka.
Rillstone, Charles, Waipori.
Somervell, John, Thames.
Stackpole, Robert, jun., Karangahake.
Thomas, Archelaus, Tapu, Thames.
Turnbull, Thomas A., Whangamata.
Willets, Henry, Thames.
Wilson, James R. S., Kuaotunu.

First-class Mine-managers' Certificates, issued to Inspectors of Mines, by virtue of Office under the Mining Acts 1886, 1891, and 1898.

Binns, G. J., Dunedin.
Cochrane, N. D., Westport.
Gordon, H. A., Wellington.
Gow, J., Dunedin.
Green, E. R., Dunedin.
Hayes, J., Dunedin.
McLaren, J. M., Thames.
Tennent, R., Westport.
Wilson, G., Thames.

SECOND-CLASS SERVICE CERTIFICATES AS MINE-MANAGERS.

Issued under "The Mining Act, 1891."

Adams, W. J., Thames.
Agnew, J. A., Coromandel.
Allen, Richard, Reefton.
Argall, A. E., Coromandel.
Bennett, C. H., Coromandel.
Begley, Thomas, Reefton.
Beard, W. T., Reefton.
Bone, William, Reefton.
Bowler, John, Thames.
Blair, Thomas, Kuaotunu.
Bray, Edwin, Reefton.
Brownlee, Thomas James, Thames.
Brokenshire, James, Thames.
Bolitho, James, Reefton.
Brown, John, Macrae's.
Bremner, John, Coromandel.
Borlase, J. H., Capleston.
Bunny, Joseph, Thames.
Byrne, John, Karangahake.
Caird, Alexander McNeil, Reefton.
Campbell, J., Kuaotunu.
Climo, Noah, Coromandel.
Comer, George, Thames.
Cowan, Hugh, Kuaotunu.
Corbett, T., Paeroa.
Comer, W. W., Thames.
Crabb, Thomas, Reefton.
Daniel, P. F., Greymouth.
Dobson, John Allen, Kuaotunu.
Edwards, George, Westport.
Ellery, John, Reefton.
Flannigan, Francis, Reefton.
Foster, Thomas, Wellington.
Gale, C. W., Coromandel.
Gill, George, Thames.
Glasgow, T. M., Thames.
Goldsworthy, Henry, Thames.
Govan, Joseph, Thames.
Griffin, Patrick, Thames.
Grimmond, Joseph, Ross.
Goldsworthy, William, Mauku, Auckland.
Gemmings, Charles, Thames.
Gribble, James, Norsewood.
Guthrie, John, Wellington.
Guy, Robert, Kuaotunu.
Harvey, William, Reefton.
Hardman, James Edward, Thames.
Harris, R., Thames.
Hetherington, William, Thames.
Hicks, W., Thames.
Hill, Alex. Grey, Waikakaho.
Hore, John, Wellington.
Hollis, Fred. J., Waihi.
Hornibrook, H. P., Kuaotunu.
Jamieson, John, Reefton.
Johnstone, William, Collingwood.
Jobe, James, Thames.
Johns, Thomas, Thames.
Kendall, Henry, Thames.
Kerr, George, Kamo.
Kirker, Thomas, Thames.
Laughlin, David, Thames.
Law, John, Thames.
Lough, H., Thames.
Loughlin, S., Thames.
McLean, James, Thames.
McLean, Alex., Coromandel.
McLean, Charles, Thames.
McCormick, Charles, Coromandel.
McQuillan, John, Reefton.
McNeill, Daniel, Thames.
McNeill, George, Upper Kuaotunu.
McCombie, John, Karangahake.
McEwen, James, Reefton.
McLoghry, Archibald, Karangahake.
Mackay, William, Nenthorn.
Martin, James, Reefton.
Meagher, John, Karangahake.
Mills, George, Thames.
Mayn, John, Coromandel.
Martin, David, Black's Point.
Morgan, William, Upper Thames.
Moorecroft, Thomas, Thames.
Milne, John, Thames.
Moyle, Thomas, Thames.
Naysmith, James, Reefton.
Newdick, Alfred, Thames.
Notman, Alexander, Reefton.
O'Keefe, M. W. D., Thames.
Page, John, Lyell.
Parkiss, Jos. W., Reefton.
Potts, W. H., Thames.
Primrose, J., Kuaotunu.
Pettigrew, Robert, Sydney.
Peebles, Alexander, Kuaotunu.
Phillips, W. H., Thames.
Pollock, John, Thames.
Rabe, Henry, Thames.
Reid, Thomas Groat, Thames.
Rickard, John, Thames.
Richards, A. H., Kuaotunu.
Radford, Thomas, Thames.
Rogers, Charles Henry, Reefton.
Rogers, William Henry, Kumara.
Ross, J., Thames.
Rowe, James, Thames.
Shaw, James, Karangahake.
Sligo, Alex., Nenthorn.
Thomas, James, Thames.
Thomas, A., Thames.
Thomson, John, Dunedin.
Tregellas, James, Reefton.
Tregoweth, William, Thames.
Wells, Charles Lewis, Thames.
Willets, Henry, Thames.
Williams, James, Thames.
Williams, John, Thames.
Whisker, Charles, Thames.
White, John S., Karangahake.
Wilson, James R. S., Kuaotunu.
Wilson, J. G., Thames.
Woodcock, James, Thames.
Worth, Robert, Waihi.

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SECOND-CLASS SERVICE CERTIFICATES AS MINE-MANAGERS—*continued*.

Second-class Mine-managers' Certificates, issued after Examination, under "The Mining Act, 1891."

Benney, J., jun., Paeroa.
Christie, William, Waitekauri.
Draffin, S., Waitekauri.
Dunkin, T., Coromandel.
Evans, H. A., Skipper's.
Gatland, V. Y., Coromandel.
Mathewson, A., Hyde.
McNeil, A. H., Coromandel.
White, F. H., Kuaotunu.
White, G. H., Thames.

Second-class Mine-managers' Certificates, issued after Examination, under "The Mining Act, 1898."

Bennie, Boyd, Coromandel.
Cahill, T. M., Upper Kuaotunu.
Carroll, John, Upper Kuaotunu.

Second-class Mine-managers' Certificates, issued under Section 313 of "The Mining Act, 1891."

Connon, William, Thames.
Coran, Henry, Thames.
Edwards, E., Coromandel.
Kelso, Archibald, Coromandel.
McCormick, W. J., Waitekauri.

Second-class Mine-managers' Certificates of Competency granted to Holders of Provisional Warrants under Section 32 of "The Mining Act Amendment Act, 1896."

Allen, W. J., Coromandel.
Barney, Montague T., Waitekauri.
Brownlee, Henry, Thames.
Collins, Charles, Waitekauri.
Curtis, Charles, Taylorville.
Davis, James, Coromandel.
Gardner, James, Waimangaroa.
Howe, Albion S., Waitekauri.
Johnson, Frank H., Collingwood.
Kirwan, William, Reefton.
McDonald, John, Tairua.
McInnes, John, Puriri.
Martin, William, Tararu, Thames.
Murphy, Joseph, Coromandel.
O'Brien, John, Westport.
Prescott, Arthur J., Coromandel.
Radford, Samuel, Waihi.
Ruffin, Richard, Manaia, Coromandel.

BATTERY-SUPERINTENDENTS' CERTIFICATES.

Issued under "The Mining Act 1891 Amendment Act, 1894," without undergoing Examination.

Adams, H. H., Waihi.
Aitken, R. M., Reefton.
Banks, Edwin Gripper, Waihi.
Barry, Hubert Percy, Waihi.
Goldsworthy, Henry, Kuaotunu.
Goldsworthy, John, Kuaotunu.
Greenway, H. Howard, Auckland.
Heard, G. St. Clair, Waihi.
Hope, John S., Waitekauri.
Hutchison, William, Karangahake.
Margetts, Frederick Ernest, Kuaotunu.
McKenna, T. N., Tararu.
McLellan, William, Waitekuri.
Mellett, Richard Sheridan, Waitekauri.
Napier, James, Karangahake.
Noble, James R., Karangahake.
Park, James, Thames.
Shepherd, Henry Franklin, Waihi.
Sims, C. F., Tararu.
Walker, James A., Kuaotunu.
Wilson, Arthur E., Waihi.
Wilson, James Kitchener, Auckland.

Battery-superintendents' Certificates, issued after Examination, under "The Mining Act 1891 Amendment Act, 1894."

Adams, A. A., Thames.
Allen, F. B., Thames.
Allom, H. O., Thames.
Ansley, Comyn, Paeroa.
Ansley, Walter, Thames.
Banks, J. H., Waihi.
Bowers, W., Thames.
Brown, A. E., Thames.
Carter, Samuel, Thames.
Clarke, J. L., Thames.
Clarke, R., Waitekauri.
Clarke, W. J., Waihi.
Day, A. T., Thames.
Dixon, Clement, Waihi.
Doveton, G. D., Thames.
Fleming, G. C. S., Thames.
Fuller, J. P., Kuaotunu.
Gray, J. W., Waihi.
Hayward, F. W., Komata.
Horn, G. W., Kuaotunu.
Jackson, J. H., Paeroa.
Jones, Achison, Waihi.
Kidd, F. D., Thames.
Laurie, D. B., Karangahake.
Lee, J. W., Reefton.
Macdonald, W., Waihi.
McKenzie, H. J., Thames.
McMicken, S. D., Thames.
Morgan, P. G., Thames.
Morrin, W. S., Thames.
Noakes, H. L., Waihi.
Raithby, R. W., Reefton.
Robinson, J. R., Waitekauri.
Stafford, B. H., Waihi.
Taylor, C. H., Tararu.
Thorpe, A. H., Thames.
Vercoe, R. B., Thames.
Wingate, H. M., Maratoto.
Winslow, G., Thames.
Williams, A. G. R., Thames.

Battery-superintendents' Certificates, issued after Examination, under "The Mining Act, 1898."

Adams, J. H., Thames.
Airey, Hubert, Karangahake.
Allen, D. V., Thames.
Allen, H. E., Wellington.
Auld, J. B., Crushington.
Baker, W. H., Thames.
Banks, E. J., Thames.
Barrett, J. J., Karangahake.
Barron, Wm. E., Waikino.
Bidlake, A. E., Waiomo.
Bishop, T. O., Reefton.
Blackadder, Wm., Crushington.
Bradley, R. J. H., Karangahake.
Browne, E., Waitekauri.
Burns, William, Waiomo.
Bush, E. F., Parawai.
Bush, H. R., Thames.
Brown, F. M., Karangahake.
Brown, J. E., Komata.
Campbell, Colin, Thames.
Carpenter, W. E., Karangahake.
Carter, S., Waihi.
Carroll, John, Kuaotunu.
Chappell, G. A., Karangahake.
Clark, John L., Waihi.
Coote, J. M., Thames.
Corbett, G. L., Waitekauri.
Couper, J., Thames.
Cowles, R. K., Crushington.
Crompton, H., Maratoto.
Croucher, Herbert, Waihi.
Dawson, B., Ellerslie.
Donnelly, Thomas, Waihi.
Draffin, Eugene, Kuaotunu.
Ellis, L. L., Waitekauri.
Empson, J. B., Karangahake.
Evans, W. B., Reefton.
Ewen, H. F., Auckland.
Fletcher, H. T., Katikati.
Fraser, J. M., Reefton.
Fuller, John P., Kuaotunu.
Gardner, E. A., Reefton.
Gow, E. A., Crushington.
Grayden, J., Waitekauri.
Grayden, Peter, Thames.
Grumitt, P. H., Thames.
Gwilliam, Ben., Karangahake.
Hargraves, E. P., Waihi.
Hay, Adam, Karangahake.
Hazard, T. R. C., Waitekauri.
Hitchcock, W. E., Barewood.
Hogg, B., Karangahake.
Horn, G. W., Kuaotunu.
Jones, R. D., Karangahake.
Kidd, R. B., Waitekauri.
Kingsford, A., Karangahake.
Launder, G. H., Waitekauri.
Lawless, L. J., Paeroa.
Lovelock, J. E., Crushington.
Mackay, John, Crushington.
Maltman, A., Reefton.
McEwin, J. A., Reefton.
Montgomery, A. E., Opitonui.
Motherwell, Wm., Waihi.
Moyle, W. T., Upper Tairua.
Orbell, G. S., Waikouaiti.
Pond, H. C., Auckland.
Quick, J. N., Thames.
Reid, J. E., Great Barrier.
Reynolds, E. A., Auckland.
Roberts, H. C., Waihi.
Rodden, Wm., Lyell.
Rosewarne, R. H., Thames.
Royse, W. G., Reefton.
Sanford, A. G., Waihi.
Stephens, H., Dunedin.
Thomson, G. W., Bendigo.
Thurlow, J. R., Coromandel.
Tomlinson, A., Karangahake.
Tomlinson, W. F., Dunedin.
Turnbull, E. V., Waihi.
Ulrich, G. A. C., Komata.
Ulrich, Herstall, Whangapoua.
Watson, A. B., Waitekauri.
Watson, A. P., Crushington.
Watson, J. R., Reefton.
Williams, A. C. Waihi.
White, A. S. H., Karangahake.

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Dredgemasters' Certificates, without examination, issued under "The Mining Act, 1898," and Amendment Acts, 1901 and 1908.

Allen, Chas., Alexandra S.
Anderson, L. C., Alexandra S.
Andrews, Ralph, Canvastown.
Baker, J. R., Alexandra S.
Ballantyne, D., Miller's Flat.
Barnes, T. J., Beaumont.
Barry, Thos., Clyde.
Bradley, Neil, Alexandra S.
Bennett, Geo., Gore.
Bennett, James, Kumara.
Blue, G. P., Alexandra.
Brand, Peter, Waikaka.
Bremen, Philip, Palmerston S.
Bremner, A. P., Lower Shotover.
Brice, Wm. H., Cromwell.
Bringans, D., Alexandra S.
Brown, T. G., Ahaura.
Bunting, James, Murchison.
Busbridge, P., Gore.
Butler, Ewen, Roxburgh.
Butler, M. J., Kanieri.
Cameron, Saml., Alexandra S.
Clarke, Ed., Port Chalmers.
Compton, Albert, Dobson.
Cormack, W., Greymouth.
Cowan, James, Nelson Creek.
Cornish, J. T., Miller's Flat.
Coutts, Henry, Miller's Flat.
Cowan, Alexander, Stillwater.
Crookston, W. L., Three-channel Flat.
Crowley, J. B., Edendale.
Cumming, J. C., Beaumont.
Cunningham, Geo., Kanieri.
Curtis, Chas., Stillwater.
Cutten, W. H., Dunedin.
Deniston, R. A., Cromwell.
Dewar, John, Alexandra S.
Donaldson, J. G. A., Greenstone.
Edmonds, A. R., Nelson Creek.
Faithful, Wm., Greymouth.
Gibb, Wm., Croydon Siding.
Gibson, A., Island Block.
Goodger, G. W.. Waenga.
Graham, J. M., Gore.
Grogan, Wm. A., Miller's Flat.
Hansen, Wm., Alexandra S.
Hay, James, Dunedin.
Hedley, A., Cromwell.
Herbert, J., Beaumont.
Hewitt, James, Clyde.
Hogg, Thos., Cromwell.
Hoskins, Thos., Maori Point.
Hoy, Samuel, Alexandra S.
Inwood, W. J., Rocklands Beach.
Johnston, E. A., Alexandra S.
Johnstone, Alexander, Cromwell.
Keen, Thos., Clyde.
Kennedy, Angus, Alexandra S.
Kitto, Ed. T., Miller's Flat.
Kitto, Francis, Lowburn.
Kitto, Jno. F., Miller's Flat.
Kitto, W. H., Cromwell.
Kloogh, N. P., Lowburn Ferry.
Lawson, Ed., Dunedin.
Ledingham, J., Bannockburn.
Lee, George, Collingwood.
Lidicoat, R. H., Fern Flat.
Louden, Alexander, Clyde.
Luke, S. J., Alexandra S.
Magnus, A., Roxburgh.
Magnus, Olaf, Box 130A, Christchurch.
Mailer, John, Stillwater.
Maitland, A. E., Miller's Flat.
Maxwell, John, Dunedin.
McClure, F. C., Rongahere.
McConnell, J., Cromwell.
McCormack, D., Kanieri.
McDonald, E. A., Waitiri.
McDonald, J., Sofala.
McDonald, Jno., Cromwell.
McGeorge, J., Dunedin.
McGeorge, Alexander, Dunedin.
McGregor, D., Kanieri.
McGregor, G. R., Alexandra S.
McIntosh, D. J., Lowburn Ferry.
McLay, Geo. Cromwell.
McLean, D., Waitiri.
McMath, D. C., Ross.
McMath, Thos., Alexandra S.
McVicar, Peter, Roxburgh.
Mills, Ed., Murchison.
Mitchell, D. A., Dunedin.
Morel, C. G., Inangahua Junction.
Morris, G. S., Cromwell.
Murray, D., Clyde.
Murray, Madget, Cromwell.
Neilson, S., Miller's Flat.
Nicholson, W. E., Alexandra S.
O'Leary, D., Waiau.
Olsen, Chas., Roxburgh.
Parsons, J. D., jun., Clyde.
Percy, John, Clyde.
Perkins, A. C., Dunedin.
Pettigrew, Geo., Nelson Creek.
Poulter, G. W., Alexandra S.
Pringle, John, Miller's Flat.
Ray, J. C., Totara Flat.
Reeder, Philip, Bald Hill Flat.
Rennie, Andrew, Roxburgh.
Ross, Alexander, Cromwell.
Ross, Robert, Alexandra S.
Richmond, J., Gibbston.
Ritchie, J. S., Waitiri.
Sanders, H. P., Clyde.
Sanders, John, Cromwell.
Sanders, Thos., Alexandra.
Schaumann, H., Alexandra S.
Scott, M. G., Alexandra S.
Scott, Robert, Capleston.
Shore, T. M., Queenstown.
Shore, Wm., Gore.
Simonsen, Chas., Alexandra S.
Skilton, A. G., Old Diggings.
Sligo, N. K., Ahaura.
Smeaton, S. H., Inangahua Junction.
Smith, Alfred, Inangahua Junction.
Steel, Archibald, Kawarua Gorge.
Steel, Thos., Dunedin.
Templeton, Ivie, Rongahere.
Thompson, J., Alexandra S.
Thompson, T., Miller's Flat.
Toohey, J. M., Alexandra.
Tough, John, Miller's Flat.
Troy, G. C., Cromwell.
Turnbull, W. D., Canvastown.
Tyson, John, Rongahere.
Von Haast, J. H., Clyde.
Wallace, John A., Miller's Flat.
Watt, John, Cromwell.
Weaver, Chas., Alexandra S.
Williamson, R., Millar's Flat.
Williamson, Walter, Miller's Flat.
Wilson, S. W., Waikaka Valley.
Wood, R. M., Cromwell.
Woodhouse, W. S., Roxburgh.
Young, Andrew, jun., Roxburgh.

Dredgemasters Certificates, after examination, issued under "The Mining Act, 1898," and Amendment Acts, 1901 and 1908.

Bourke, John, Clyde.
Guyton, James, St. Clair, Dunedin.
Kane, Wm., Clyde.
Mathews, A. A., Three-channel Flat.
McDonald, Gregor, Alexandra S.
Nelson, Edgar, Brunnerton.
Reiderer, Ed., Cromwell.
Sanders, W. J., Ahaura.
Taylor, J. T., Dunedin.
Wood, W. W., Cromwell.

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NUMBER of MACHINES employed in QUARTZ-MINING in the AUCKLAND DISTRICT, and the VALUE thereof, for the Year ended the 31st December, 1902.

Mining District.	Machinery employed in Quartz-mining.									
	Steam-engines employed winding, crushing, &c.		Crushing-machines.	Stamp-heads.	Water-wheels.	Whims.	Whips and Pulleys.	Derricks.	Berdans.	Approximate Value of all Mining Plant included in this Return.
	Number.	Aggregate Horse-power.								
										£
Waihi	25	3,594	..	330	5	..	..	..	18	257,640
Ohinemuri ..	17	1,402	..	325	10	..	..	..	40	157,810
North Hauraki ..	27	986	..	173	5	..	..	..	50	95,246
South Hauraki ..	27	1,252	..	462	53	..	..	..	187	180,162
Te Aroha ..	1	..	..	10	1	..	..	..	2	2,700
Great Barrier Isl'd	4	125	..	20	..	..	..	..	3	11,125
	101	7,359	..	1,320	74	..	..	..	300	704,683

STATEMENT showing the Whole of the QUARTZ-CRUSHING MACHINES and APPLIANCES for treating Auriferous and Argentiferous Ores in the HAURAKI MINING DISTRICT for the Year ended the 31st December, 1902.

[NOTE.—Under heading "Power Employed" the letter H. indicates hand, O. oil, S. steam, and W. water power.]

Locality where Machine is situated.	Name of Machine.	Name of Owners.	Number of Rock-breakers.	Number of Stamps.	Number of Ore-crushers.	Number of Berdans.	Number of Pans.	Number of Settlers.	Number of Mortars.	Number of Retorts.	Number of Furnaces for Gold melting or retorting.	Number of Furnaces for Assay Purposes.	Number of Plants for Cyanide Process.	Number of Concentrating Plants.	Power employed.
Coromandel County.															
Coromandel ..	Telephone ..	Hauraki Gold-mining Co.	..	15	..	8	..	..	2	3	1	..	..	..	S
" ..	Corby	Scotty's Gold-mining Co.	..	9	..	8	..	..	1	2	1	..	..	..	W
" ..	Hauraki Associated	Hauraki Mines ..	..	12	..	4	..	..	1	1	1	..	..	..	S, W
" ..	Success	Sea View	..	10	..	4	..	..	1	1	1	..	..	..	S
Tokatea	Tokatea.. ..	Royal Oak of Hauraki Gold-mining Co.	1	15	..	8	..	..	2	2	1	..	..	..	S, W
" ..	West Tokatea ..	West Tokatea Gold-mining Co.	..	3	..	2	..	..	1	1	..	..	..	..	S
Tiki	Progress-Castle Rock	Progress-Castle Rock Gold-mining Co.	1	2	..	2	..	..	2	1	..	..	..	..	S
Waikomoriki ..	Four-in-hand ..	Four-in-hand Gold-mining Co.	..	10	..	2	..	..	1	1	1	1	..	..	S
Cabbage Bay ..	Vizard's ..	Cabbage Bay Extended Gold-mining Co.	..	4	..	1	..	..	1	1	1	..	..	..	W
Coromandel ..	Public battery ..	School of Mines Board in trust	..	5	..	2	..	..	1	1	1	..	..	..	S
Opitonui ..	Opitonui ..	Kauri Freehold Gold Estates Gold-mining Co.	2	40	..	..	..	5	2	2	2	2	1	2	S
" ..	Ouera	Ditto	..	16	..	4	..	..	2	2	1	.	..	..	S
Kuaotunu ..	Try Fluke ..	Kuaotunu Syndicate ..	..	16	..	3	..	2	2	2	1	1	1	..	S
" ..	Kapai-Vermont ..	" ..	1	..	..	*1	..	1	1	1	1	1	2	..	S
" ..	Great Mercury ..	Great Mercury Gold-mining Co.	..	10	..	1	..	1	4	2	1	1	1	..	S
" ..	Irene	Irene Gold-mining Co. ..	..	10	..	2	..	1	2	1	1	1	1	..	S
" ..	Handsworth ..	Louis Woodcock ..	..	3	..	1	..	..	1	1	..	..	..	..	W
Mahakirau ..	Mahakirau ..	New Zealand Government	..	3	..	1	..	..	1	1	..	..	..	..	S
Thames County.															
Gumtown ..	Welcome Jack ..	Welcome Jack Gold-mining Co.	..	5	..	2	..	..	1	1	1	..	..	..	S
" ..	Kapowai ..	Kapowai Gold-mining Co.	..	8	..	3	..	..	1	1	1	..	..	..	S
Tapu	Bullion	Harry Adams	..	15	..	4	..	..	2	2	1	..	..	..	W
"	Mahara Royal ..	Harry Adams and party..	..	20	..	18	..	..	2	2	1	..	..	..	W
Waiomo	Monowai ..	Monowai Gold-mining Co.	1	10	..	1	1	2	1	2	1	..	..	..	S, W
Puru	Puru	Puru Consolidated Gold-mining Co.	..	10	..	2	..	..	1	1	1	..	..	..	W
Tararu	Tararu ..	..	..	30	..	6	..	3	2	1	1	1	1	..	S, W
"	New Alburnia ..	New Alburnia Gold-mining Co.	..	20	..	7	..	2	1	3	1	..	..	..	W
"	Berry's	Charles Berry ..	..	1	..	3	..	..	1	1	1	..	..	..	W
"	Eclipse	Eclipse Gold-mining Co...	..	10	..	3	1	..	1	2	1	..	..	..	W
"	Chicago	..	..	10	..	2	1	..	1	1	..	..	..	..	W
Karaka	Claremont ..	George Bryant	..	1	..	1	..	..	1	3	..	..	..	..	H
"	Junction ..	McGregor and Taylor ..	..	5	..	1	..	..	1	1	..	..	..	..	W
Hape	Anchor	..	..	4	..	2	..	..	1	1	..	..	..	..	S, W

* Otis mill.

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STATEMENT showing the Whole of the QUARTZ-CRUSHING MACHINES and APPLIANCES for treating Auriferous and Argentiferous Ores in the HAURAKI MINING DISTRICT for the Year ended the 31st December, 1902—*continued*.

Locality where Machine is situated.	Name of Machine.	Name of Owners.	Number of Rock-breakers.	Number of Stamps.	Number of Ore-crushers.	Number of Berdans.	Number of Pans.	Number of Settlers	Number of Mortars.	Number of Retorts.	Number of Furnaces for Gold melting or retorting.	Number of Furnaces for Assay Purposes.	Number of Plants for Cyanide Process.	Number of Concentrating Plants.	Power employed.
Thames County—ctd															
Hape	Fortuna ..	Henry Rabe	..	5	..	2	..	..	1	1	1	..	..	..	W
Kerikeri	Kerikeri ..	Fleming	..	4	..	2	..	..	1	1	..	..	..	..	S
Puriri	Puriri	Puriri Gold Estates Gold-mining Co.	..	8	..	2	..	..	1	1	1	..	..	..	W
"	Hit or Miss ..	John McInnis and party	..	6	..	2	..	..	1	1	..	..	..	..	S, W
Tairua	Ajax	H. Adams and party ..	..	12	..	4	..	..	1	1	1	..	..	..	S, W
"	Broken Hill ..	Broken Hill Gold-mining Co.	1	20	..	6	..	..	1	1	1	1	1	..	S, W
"	Chelmsford ..	Chelmsford Gold-mining Co.	1	10	..	2	..	..	1	1	1	1	1	..	W
"	Taniwha ..	Taniwha Gold-mining Co.	..	3	..	1	..	..	1	1	..	..	..	..	O
Whangamata ..	Luck at Last ..	Whangamata Proprietary Gold-mining Co.	2	..	*2	6	..	..	1	1	1	1	1	..	W
" ..	Mananu ..	Mananu Gold-mining Co.	1	20	..	1	..	..	1	1	1	1	1	..	S, W
Ohui	Ohui	J. J. Mackay	..	2	..	1	..	..	1	1	..	..	..	..	W
Omahu	Sheet Anchor ..	Tillsley Bros.	..	2	..	1	..	..	1	1	..	..	..	..	S
Thames Borough ..	Kuranui ..	Kuranui Gold-mining Co.	..	20	..	6	..	..	2	2	1	..	..	..	W
" ..	Moanataiari ..	New Moanataiari Gold-mining Co.	..	60	..	21	4	..	2	6	1	1	1	1	S, W
" ..	Judd's	Charles Judd	..	..	..	2	9	..	..	..	1	..	..	..	W
" ..	Comer's ..	Kuranui-Caledonian Gold-mining Co.	..	20	..	5	..	..	2	1	1	..	..	..	W
" ..	May Queen ..	May Queen-Hauraki Gold-mining Co.	..	33	..	8	3	..	2	3	2	..	..	..	W
" ..	Cambria ..	New Moanataiari Gold-mining Co.	..	21	..	13	1	..	2	5	1	..	..	..	W
" ..	Waiotahi ..	Waiotahi Gold-mining Co.	..	21	..	5	..	..	2	2	1	..	..	..	S
" ..	Fame and Fortune	Fame and Fortune Gold-mining Co.	..	21	..	16	..	..	2	2	1	..	..	..	W
" ..	School of Mines ..	School of Mines Board in trust	1	2	..	1	1	1	3	3	1	4	1	..	W
" ..	May Queen Extended	May Queen Extended Gold-mining Co.	..	23	..	14	..	..	2	4	1	..	..	..	W
" ..	Fairmile ..	W. Manning	..	..	..	1	..	..	1	1	1	..	..	..	W
" ..	Bank of New Zealand	Bank of New Zealand ..	..	..	..	..	..	..	2	2	1	1	..	..	H
" ..	Bank of New South Wales	Bank of New South Wales	..	..	..	..	..	..	2	2	1	1	..	..	H
Ohinemuri County.															
Paeroa	Bank of New Zealand	Bank of New Zealand ..	1	..	..	..	..	..	2	1	1	1	..	..	H
Karangahake ..	Crown	New Zealand Crown Mines Gold-mining Co. (Ltd.)	2	60	..	4	..	..	2	2	1	1	1	..	S, W
" ..	Woodstock ..	Woodstock Gold-mining Co.	2	40	..	2	..	..	2	2	1	1	1	1	S, W
" ..	Talisman ..	Talisman Extended Gold-mining Co.	4	60	..	5	..	..	3	3	1	1	1	1	S, W
Komata	Komata.. ..	Komata Reefs Gold-mining Co.	2	20	..	4	..	..	2	2	1	1	1	1	S, W
Waitekauri ..	Waitekauri ..	Waitekauri Gold-mining Co.	2	40	1	6	..	..	3	2	1	1	1	1	S, W
" ..	Golden Cross ..	Ditto	1	10	..	2	..	..	2	2	1	1	1	..	S, W
" ..	Grace Darling ..	"	1	10	..	3	..	..	1	2	1	1	1	..	S, W
" ..	Jubilee	Jubilee Gold-mining Co.	..	10	..	5	2	1	1	2	1	1	1	..	S
" ..	Alpha	Alpha Gold-mining Co...	1	20	..	2	..	..	1	1	1	1	1	..	S
Maratoto	Waitekauri Extended	Waitekauri Extended Gold-mining Co.	1	40	..	3	..	..	2	2	1	1	1	..	W
"	Maratoto ..	Maratoto Gold-mining Co.	..	10	..	2	..	..	2	1	1	1	1	..	S
"	Hikutaia Gold Syndicate	Hikuaia Gold Syndicate	1	5	..	2	..	..	1	2	1	1	..	..	S
Waihi	Waihi	Waihi Gold-mining Co...	2	90	..	5	..	..	3	6	1	1	1	..	S, W
"	Union-Waihi ..	" ..	2	40	..	2	..	..	2	2	1	1	1	..	S, W
Waikino	Waikino ..	" ..	4	200	..	12	..	..	3	4	1	1	1	..	S, W
Piako County.															
Waiorongomai ..	Waiorongomai ..	E. H. Hardy	1	10	..	4	..	..	2	2	1	1	1	..	W
City of Auckland.															
Auckland ..	Fraser's	Fraser Bros.	..	..	1	2	2	2	2	1	1	..	..	..	S
" ..	Bank of New Zealand	Bank of New Zealand ..	..	..	..	1	1	2	6	4	2	..	..	..	W
Great Barrier Island.	Barrier Reefs Gold- and Silver-m. Co.	Barrier Reefs Gold- and Silver-mining Co.	1	20	..	3	..	2	3	2	1	1	1	1	S
			40	1,321	5	300	26	25	126	138	67	37	28	8	

* Krupp mill.

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STATEMENT showing the Whole of the QUARTZ-CRUSHING MACHINES and APPLIANCES for treating Auriferous Ores in the MARLBOROUGH, NELSON, and WEST COAST MINING DISTRICTS for the Year ended the 31st December, 1902.

Locality where Machine is situated.	Name of Machine.	Name of Owner.	Number of Rock-breakers.	Number of Stamps.	Number of Ore-crushers.	Number of Berdans.	Number of Pans.	Number of Settlers.	Number of Mortars.	Number of Retorts.	Number of Furnaces for Gold-melting.	Number of Furnaces for Assay Purposes.	Number of Plants for Cyanide Process.	Number of Plants for Chlorination.	Number of Concentrating Plants.	Power employed.
Marlborough County.																
Top Valley ..	Wellington ..	T. W. Young and P. K. Watty	..	10	..	1	..	..	..	1	..	..	..	..	..	S
" ..	Jubilee	Jubilee Gold-mining Co. (Limited)	..	10	..	..	..	..	..	..	..	..	..	..	..	W
Collingwood County.																
Taitapu	Golden Ridge ..	Taitapu Gold Estates (Limited)	2	20	..	4	..	1	1	2	1	1	..	..	..	W
"	Golden Blocks ..	Golden Blocks (Taitapu) (Limited)	..	8	..	..	..	1	1	2	..	..	..	..	..	S
Buller County.																
Mokihinui ..	Red Queen ..	Red Queen Gold-mining Co. (Limited)	..	2	..	..	..	..	..	..	..	..	..	..	..	W
Waimangaroa ..	Britannia ..	Britannia Gold-mining Co. (Limited)	..	5	..	..	..	..	..	..	..	..	..	..	..	W
" ..	Stony Creek ..	Stony Creek Gold-mining Co. (Limited)	..	10	..	2	..	..	2	2	..	..	..	..	..	W
Lyell	Alpine Extended ..	Alpine Extended Gold-mining Co. (Limited)	..	20	..	4	..	1	1	2	..	..	1	..	..	W
Inangahua County.																
Bourke's Creek ..	Gardiner's ..	W. P. Gardiner and Sons ..	..	..	..	12	..	..	1	2	..	..	..	..	..	W
Victoria Range ..	Kirwan's Reward ..	Kirwan's Reward Gold-mining Co. (Limited)	..	15	..	..	..	..	..	1	1	..	..	..	..	W
Capleston ..	Welcome	Welcome Gold-mining Co. (Limited)	..	5	..	..	..	..	..	2	1	..	1	..	..	S
Reefton	Golden Fleece ..	Consolidated Goldfields of New Zealand (Limited)	1	20	..	1	..	..	..	2	1	..	1	..	1	S
"	Wealth of Nations ..	Ditto	..	20	..	1	..	..	2	2	1	..	1	..	..	W
"	Keep-it-Dark ..	Keep-it-Dark Quartz-mining Co. (Limited)	..	20	..	4	..	1	1	2	1	1	1	..	1	W
"	Progress Mines ..	Progress Mines of New Zealand (Limited)	3	65	..	1	..	..	2	2	1	1	1	1	1	W
.. ..	New Scotia ..	New Scotia Gold-mining Co. (Limited)	..	10	..	1	..	..	1	1	..	..	1	..	..	S
"	Golden Lead ..	Golden Lead Gold-mining Co. (Limited)	..	10	..	..	..	..	1	..	..	..	..	..	..	W
"	Last Chance ..	Alex. Fleming and party ..	..	5	..	..	..	..	1	1	..	..	..	..	..	S
"	New Inkerman ..	New Inkerman Mines (Limited)	..	30	..	3	..	..	1	1	1	1	1	..	1	S
"	Big River ..	Big River Gold-mining Co. (Limited)	..	10	..	4	..	..	2	2	1	1	1	..	..	W
"	King George ..	St. George Gold-mining Co. (Limited)	..	5	..	..	..	..	1	1	..	..	..	..	..	W
Grey County.																
Paparoa Ranges ..	Mount Paparoa ..	Mount Paparoa Gold-mining Co. (Limited)	..	10	..	1	..	..	1	1	..	..	..	..	..	W
Ten-mile Creek ..	Taffy	Taffy Gold-mining Co. (Limited)	..	5	..	1	..	..	..	1	..	..	..	..	..	W
			6	315	..	40	..	4	19	30	9	5	9	1	4	

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QUARTZ-CRUSHING MACHINES and APPLIANCES for treating Auriferous Ores in the SOUTHERN MINING DISTRICT for the Year ended the 31st December, 1902.

Locality where Machine is situated.	Name of Machine.	Name of Owner.	Number of Rock-breakers.	Number of Stamps.	Number of Ore-crushers.	Number of Berdans.	Number of Pans.	Number of Settlers.	Number of Mortars.	Number of Retorts.	Number of Furnaces for Gold smelting.	Number of Furnaces for Assay Purposes.	Number of Plants for Cyanide Process.	Number of Concentrating Plants.	Power employed.
Tuapeka County—															
Waipori	Otago Pioneer Quartz	Otago Pioneer Quartz (Waipori) Gold-mining Co.	1	10	..	..	..	..	..	1	1	1	..	1	S
"	Bella	Bella Gold-mining Syndicate	..	5	..	..	..	..	..	..	..	..	..	..	W
Bruce County—															
Waitahuna ..	Burnt Creek ..	Table Hill Quartz-mining Co.	..	10	..	..	..	..	..	..	..	..	..	..	W
" ..	Canada	Canada Reef Gold-mining Co.	..	10	..	..	..	..	..	..	..	..	..	..	W
Lake County—															
Queenstown ..	Invincible ..	Invincible Gold-mining Co.	..	10	..	7	..	..	2	..	..	..	1	1	W
Macetown	Premier	Premier Sunrise, late Indian Glenrock (Wynaad) Co.	1	20	..	2	..	1	4	1	1	1	1	..	W
"	Tipperary ..	Westralia and New Zealand Gold Exploration Co.	..	10	..	1	..	1	..	1	1	1	1	..	W
Skipper's	Shotover ..	Shotover Quartz-mining Co.	..	10	..	..	..	..	..	..	..	..	..	..	W
Bullendale ..	Achilles	Achilles Gold-mines ..	1	30	..	..	..	..	6	1	1	1	..	..	W
Bannockburn ..	Day Dawn ..	Lawrence Bros. ..	..	4	..	1	..	..	1	..	..	..	..	..	W
" ..	Carrick	James Lawrence ..	..	10	..	..	..	..	2	..	..	..	..	..	W
" ..	Star of the East ..	Lawrence Bros. ..	..	10	..	..	..	..	..	..	..	..	..	..	W
Bendigo	Bendigo ..	Cromwell Proprietary Gold-mining Co.	..	20	..	4	..	..	4	1	1	1	..	..	S, W
"	..	Macabe and Son ..	..	2	..	..	..	..	..	..	..	..	..	..	W
"	..	Bendigo Tailings Syndicate	..	..	..	..	..	..	..	..	1	1	..	..	..
"	Alta	Alta Gold-mining Co. ..	..	4	..	..	..	..	1	..	..	..	..	..	O
Fiord County—															
Te Oneroa ..	New Star ..	New Star Gold-mining Co.	..	10	..	14	..	..	..	..	..	..	..	..	S
" ..	Alpha Dawn ..	Alpha Dawn Gold-mining Co.	..	..	..	..	..	..	..	..	..	..	..	..	..
" ..	Golden Site ..	Golden Site	..	10	..	4	..	..	..	..	..	..	..	..	W
Vincent County—															
Bald Hill Flat ..	Excelsior ..	F. W. Gray	..	3	..	..	..	..	1	1	1	..	..	..	W
" ..	White's Reef ..	R. T. Symes	..	5	..	1	..	..	1	1	1	..	..	..	W
Maniototo County—															
Hyde	Mount Highlay ..	Mount Highlay Gold-mining Co.	..	12	..	..	..	..	..	..	..	..	..	..	W
Rough Ridge ..	Great Eastern ..	F. H. Perry	..	5	..	..	1	..	1	1	1	..	..	..	W
Waihemo County—															
Macrae's	Ounce	Ounce Gold-mining Co. ..	..	8	..	..	..	..	..	..	..	..	..	..	W
"	Bonanza ..	L. O. Beal, jun. ..	1	5	1	..	1	..	1	1	1	..	..	..	W
"	Mills's United ..	H. N. Mills and Son ..	..	5	..	1	..	..	1	1	1	..	..	..	S
"	Golden Point ..	W. and G. Donaldson ..	1	10	1	1	2	..	1	1	..	..	..	1	O
Stoneburn ..	Golden Bar ..	Golden Bar Gold-mining Co.	..	10	..	..	..	..	1	1	1	..	..	..	S
" ..	Gilvern	A. G. Davies	..	5	..	..	..	..	1	1	..	..	..	..	W
Taieri County—															
Hindon	Parker's	A. Parker	..	4	..	..	..	..	1	..	..	..	..	..	O
Barewood	Barewood ..	Barewood Gold-mining Co.	..	5	..	..	..	..	1	1	..	..	..	..	S
			5	262	2	36	4	2	30	14	12	6	3	2	..

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STATEMENT showing the QUANTITY of QUARTZ CRUSHED and GOLD OBTAINED in the HAURAKI MINING DISTRICT for the Year ended the 31st December, 1902.

Locality and Name of Mine.	Average Number of Men employed.	Quartz crushed.	Gold obtained.		Estimated Value.
			Amalgamation.	Cyanide.	
GREAT BARRIER ISLAND.					
		Tons cwt. lb.	Oz. dwt.	Oz. dwt.	£ s. d.
Sunbeam Claim	3	1 0 0	21 0	..	2 14 10
COROMANDEL COUNTY.					
Cabbage Bay—					
Extended Quarts Claim	1	1 10 0	1 10	..	4 5 6
Kennedy's Bay—					
Macaronic	5	8 5 0	5 9	..	14 17 0
Waikoromiko—					
Four-in-Hand	10	340 0 10	400 7	..	1,165 14 3
Tokatea—					
Royal Oak	60	1,134 1 104	3,761 2	..	9,538 0 6
Hauraki Mines (Limited)	5	23 7 90	52 17	..	132 2 6
West Tokatea	4	4 10 0	41 10	..	115 15 5
	69	1,161 19 82	3,855 9	..	9,785 18 5
Kapanga—					
Kapanga	5	595 0 0	213 3	..	571 16 10
South Kapanga	5	5 0 0	11 5	..	31 1 0
Success	4	67 0 0	132 0	..	382 16 0
Blagroves	2	2 0 0	4 10	..	13 3 3
	16	669 0 0	360 18	..	998 17 1
Hauraki Block—					
Hauraki	25	789 0 0	1,340 6	..	4,037 3 11
Hauraki No. 2	2	15 0 0	4 6	..	12 18 0
Bunker's Hill	10	83 0 0	1,693 18	..	5,214 10 10
Mermaid	2	18 5 0	19 8	..	58 4 0
	39	905 5 0	3,057 18	..	9,322 16 9
Tiki—					
Progress-Castle Rock	4	74 0 0	123 5	..	295 16 0
Opitonui—					
Kauri Freehold Gold Estates ..	120	16,121 0 0	..	8,351 11	15,653 6 6
Kuaotunu—					
Waitaia	20	989 0 0	797 17	625 19	4,094 9 5
Irene	5	240 0 0	299 15	..	649 18 2
Juno	2	6 5 0	31 6	..	78 5 0
Invicta	2	15 0 0	10 4	..	25 9 0
Great Mercury	5	325 0 0	332 3	..	786 2 6
Kuaotunu Syndicate	8	1,565 0 0	350 0	330 0	1,498 15 9
Handsworth	2	88 6 104	125 7	..	309 4 9
	44	3,228 11 104	1,946 12	955 19	7,442 4 7
Mahakirau—					
Nil Desperandum	2	0 0 80	6 0	..	15 15 0
Sundries	4	78 19 13	101 16	..	246 10 0
Totals	314	22,588 11 15	9,859 4	9,307 10	44,946 1 1
THAMES COUNTY AND BOROUGH.					
Tapu—					
Mahara-Royal	1	*143 0 0	43 1	..	120 19 0
Bullion	3	20 0 0	72 12	..	218 0 0
	4	163 0 0	115 13	..	338 19 0
Waiomo—					
Monowai	35	4,044 0 0	..	14,728 0	4,575 2 2
Puru—					
Puru Consolidated	4	455 0 0	127 7	..	317 17 6
Tararu—					
Tararu Creek	2	200 0 0	..	35 11	83 7 0
Eclipse	16	3,657 0 0	1,418 9	..	3,917 12 6
	18	3,857 0 0	1,418 9	35 11	4,000 19 6
Kuranui—					
Kuranui	12	35 0 0	57 2	..	98 8 6

* Tailings.

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STATEMENT showing the QUANTITY of QUARTZ CRUSHED and GOLD OBTAINED in the HAURAKI MINING DISTRICT for the Year ended the 31st December, 1902—*continued*.

Locality and Name of Mine.	Average Number of Men employed.	Quartz crushed.	Gold obtained: Amalgamation.	Gold obtained: Cyanide.	Estimated Value.
THAMES COUNTY AND BOROUGH—*continued*.					
Moanataiari—		Tons cwt. lb.	Oz. dwt.	Oz. dwt.	£ s. d.
Moanataiari	57	1,311 10 0	2,453 10	..	6,744 5 8
Kuranui-Caledonian	54	607 7 107	1,337 18	..	3,639 9 1
New Alburnia	4	19 10 0	36 11	..	73 10 1
Golden Drop	2	7 0 0	28 11	..	70 1 5
	117	1,945 7 107	3,846 10	..	10,527 6 3
Waiotahi—					
Waiotahi	14	1,210 0 0	1,601 0	..	4,343 19 1
Nonpareil	6	208 10 8	200 3	..	559 14 6
Fame and Fortune	25	381 0 0	527 0	..	1,505 16 2
Ballarat	3	9 0 0	36 14	..	108 1 4
West Coast	2	14 0 0	96 16	..	342 0 0
	50	1,822 10 8	2,461 13	..	6,759 11 1
Grahamstown—					
May Queen	46	1,446 10 0	2,564 3	..	7,017 15 7
Victoria	7	327 0 0	134 17	..	365 11 7
	53	1,773 10 0	2,699 0	..	7,383 7 2
Karaka—					
May Queen Extended	4	103 0 0	53 14	..	150 8 8
Claremont	1	0 3 64	259 19	..	701 17 6
Thames Talisman	4	1 0 0	0 9	..	1 5 2
Gloucester	4	10 0 17	17 18	..	43 15 0
Babydim	2	20 0 0	36 13	..	91 12 6
Morning Star	2	1 0 15	15 18	..	39 15 0
	17	135 3 96	384 11	..	1,026 13 10
Una Hill—					
Fortuna	6	55 0 0	32 7	..	87 1 1
Weymouth	2	6 0 0	4 16	..	12 0 0
Ethel Reef	2	4 0 3	3 11	..	8 17 6
	10	65 0 3	40 14	..	107 18 7
Puriri—					
Miner's Right	5	171 0 0	95 9	..	266 9 6
Whangamata—					
Manana	40	3,508 0 0	3,586 8	533 13	7,595 8 10
Broken Hills	50	4,328 0 0	5,421 0	4,500 0	19,097 18 6
Chelmsford	25	2,169 0 0	672 10	690 14	2,531 2 8
Taniwha	12	328 0 0	121 10	..	287 0 5
	127	10,333 0 0	9,801 8	5,724 7	29,511 10 5
Gumtown—					
Welcome Jack	10	208 0 0	489 13	..	1,164 3 10
Kapowai	4	29 10 0	47 16	..	113 8 11
Golden Reefs	2	18 0 0	13 15	..	32 19 1
Big Beetle	3	2 0 0	51 14	..	155 2 0
	19	257 10 0	602 18	..	1,465 13 10
Sundries	16	650 0 0	952 14	..	1,198 7 11
"	7	5,948 0 0	733 1	..	1,924 5 1
Junction, Karaka	2	197 10 9	52 14	..	154 3 0
	25	6,795 10 9	1,738 9	..	3,276 16 0
Totals	496	31,852 11 111	23,389 3	20,487 18	69,658 13 4
WAIHI BOROUGH.					
Waihi—					
Waihi	1,141	179,485 0 0	..	605,997 7	470,286 7 7
	..	..	Concentrates	.. ..	48,632 12 2
	..	..	From slag tailings	..	1,219 15 3
Union-Waihi	Finishing up	549 0 0	659 0	2,289 0	4,303 14 7
Total	1,141	180,034 0 0	659 0	608,286 7	524,442 9 7
OHINEMURI COUNTY.					
Waitekauri—					
Waitekauri Company	122	15,601 0 0	..	25,131 0	25,806 9 8
Waitekauri King	3	17 0 0	..	41 0	58 4 4
	125	15,618 0 0	..	25,172 0	25,864 14 0
Owharoa—					
Rising Sun	2	1 0 0	..	3 1	1 18 5

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STATEMENT showing the QUANTITY of QUARTZ CRUSHED and GOLD OBTAINED in the HAURAKI MINING DISTRICT for the Year ended the 31st December, 1902—*continued*.

Locality and Name of Mine.	Average Number of Men employed.	Quartz crushed.	Gold obtained.		Estimated Value of Gold or Bullion.
			Amalgamation.	Cyanide.	
OHINEMURI COUNTY—*continued*.					
Karangahake—		Tons cwt. lb.	Oz. dwt.	Oz. dwt.	£ s. d.
New Zealand Crown Mines	245	33,523 0 0	..	39,373 14	74,764 4 2
New Zealand Talisman	120	13,396 0 0	..	50,409 0	20,163 13 0
Woodstock	91	5,967 0 0	5,462 6	9,437 0	9,917 13 7
	456	52,886 0 0	5,462 6	99,219 14	104,845 10 9
Komata—					
Komata Reefs	83	12,190 0 0	7,587 3	31,771 11	27,140 1 5
Maratoto—					
Hikutaia Gold Syndicate	12	5,231 0 0	772 2	970 5	4,355 17 6
Totals	678	85,926 0 0	13,821 11	157,136 11	162,208 2 1
PIAKO COUNTY.					
Waiorongomai—					
Empire and Mamoth	12	388 0 0	768 12	..	1,467 0 11
Cadman	2	114 0 0	70 0	..	202 8 0
	14	502 0 0	838 12	..	1,669 8 11
SUMMARY.					
Great Barrier	3	1 0 0	21 0	..	2 14 10
Coromandel County	314	22,588 11 15	9,859 4	9,307 10	44,946 1 1
Thames County and Borough	496	31,852 11 111	23,389 3	20,487 18	69,658 13 4
Waihi Borough	1,141	180,034 0 0	659 0	608,286 7	524,442 9 7
Ohinemuri County	678	85,926 0 0	13,821 11	157,136 11	162,208 2 1
Piako County	14	502 0 0	838 12	..	1,669 8 11
Grand totals, 1902 ..	2,646	320,904 3 14	48,588 10	795,218 6	802,927 9 10
" 1901 ..	3,224	308,350 6 39	30,900 17	581,858 11	726,012 7 11
Increase	..	12,553 16 87	17,687 13	213,359 15	76,915 1 11
Decrease	578	..	..	..	..

Number of men employed on development-work in the whole district from which no returns of gold have been obtained: 150.

BATTERY RETURNS from QUARTZ-MINES in the MARLBOROUGH, NELSON, and WEST COAST MINING DISTRICTS for the Year ended the 31st December, 1902.

Name and Locality of Mine.	Quartz crushed.	Yield of Gold.	Approximate Total Values.
Marlborough District—	Tons.	Oz. dwt. gr.	£ s. d.
Jubilee	644	151 19 13	533 14 9
Collingwood District—			
Golden Ridge	3,442	2,223 3 14	9,680 11 1
Golden Blocks	2,402	2,119 0 0	8,171 16 3
Westport District—			
Red Queen, Mokihinui	20	14 12 0	56 18 9
Britannia	129	138 0 9	538 2 9
Stony Creek	200	32 1 10	111 3 2
Lyell District—			
Alpine Extended	2,369	1,368 3 0	5,218 12 6
Reefton District—			
Welcome	1,776	1,194 13 23	4,602 16 8
Kirwan's Reward	3,963	2,547 15 21	10,212 8 2
Golden Fleece	13,614	7,001 9 22	29,896 5 2
Wealth of Nations	11,566	5,544 4 15	23,106 14 5
Keep-it-Dark	11,405	3,800 19 3	13,817 10 0
Progress Mines	55,976	26,486 19 5	106,999 16 2
Industry	182	29 7 0	82 16 0
Last Chance	3	6 0 0	24 6 0
Taffy	180	24 5 15	97 2 6
Totals	107,871	52,632 15 6	212,150 14 4

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BATTERY RETURNS from QUARTZ-MINES in the SOUTHERN DISTRICT for Year ended the 31st December, 1902.

Name and Locality of Mine.	Ordinary Quartz crushed.	Produce of Amalgam.	Retorted Gold.	Melted Gold.	Value.	Tailings treated.	Gold from Tailings.
	Ton cwt. qr.	Oz. dwt. gr.	Oz. dwt. gr.	Oz. dwt. gr.	£ s. d.	Ton	Oz. £ s. d.
New Star, Preservation Inlet ..	178 0 0	307 12 0	113 15 0	..	460 18 9	..	.. .. ..
Alpha, Preservation Inlet ..	306 0 0	..	25 7 0	..	71 13 0	..	.. .. ..
Indian Glenrock, Wynaad (now Premier Sunrise, New Zealand). Macetown	2,178 0 0	5,659 10 0	1,759 14 0	1,752 1 23	6,743 15 3	27	88 281 4 9*
Shotover, Skipper's	184 0 0	213 19 0	106 0 6	..	397 13 4	..	.. .. ..
Cromwell Proprietary, Bendigo ..	..	..	..	..	..	..	.. .. ..
Bendigo Tailings Syndicate, Bendigo	..	..	..	..	..	877	110 285 17 7*
Mount Highlay, Hyde	..	..	200 0 0	..	687 0 0	..	.. .. ..
Barewood, Barewood	2,133 0 0	..	2,253 5 7	..	8,553 6 10	..	.. .. ..
O.P.Q. (Waipori), Waipori ..	..	..	..	..	..	..	.. .. ..
Sundries	4,199 10 0	1,318 0 0	1,806 1 2	..	6,911 17 7	250	36 140 8 0†
Total	9,178 10 0	7,499 1 0	6,264 2 15	1,752 1 23	23,826 4 9	1,154	234 707 10 4

A return of 41 tons scheelite has also been made.
Sundries include the returns of ten mines owned by private parties, who do not desire their returns to be published.
* Tailings treated by cyanide. † Tailings treated by Huntingdon Mill.

STATEMENT of VALUE of GOLD WON from QUARTZ CRUSHED for ALL DISTRICTS for Years ended the 31st December, 1901 and 1902.

Mining District.	Year ended the 31st December, 1902.	Year ended the 31st December, 1901.
	£	£
Hauraki	802,927	726,012
Marlborough, Nelson, and West Coast	212,151	196,952
Otago and Southland...	24,534	19,944
Totals	1,039,612	942,908

GROSS TOTALS and VALUE of GOLD PURCHASED by BANKS for Year ended the 31st December, 1902.

Bank.	Gold purchased.	Value.
Hauraki Mining District.		
	Oz. dwt. gr.	£ s. d.
Bank of New Zealand	81,743 7 0	119,837 7 7
Bank of New South Wales	16,490 5 12	30,811 10 9
Totals	98,233 12 12	150,648 18 4
Marlborough, Nelson, and Westland Mining Districts.		
Bank of New Zealand	34,979 15 18	136,528 5 11
Bank of New South Wales	9,691 0 22	38,382 19 5
National Bank of New Zealand	29,164 1 23	113,684 15 3
Union Bank of Australia	1,453 0 0	5,693 0 0
Private buyers	36 11 0	134 6 9
Totals	75,324 9 15	294,423 7 4

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GROSS TOTALS and VALUE of GOLD PURCHASED by BANKS for Twelve Months ended the 31st March, 1903—*continued*.

Bank.	Gold purchased.	Value.
Otago and Southland Districts.		
Bank of New Zealand	115,755 15 11	444,559 7 1
Bank of New South Wales	15,560 19 19	60,073 6 11
National Bank of New Zealand	38,663 15 5	149,168 14 7
Bank of Australasia	9,579 19 8	38,616 10 0
Totals	179,560 9 19	692,417 18 7
Grand totals	353,118 11 22	1,137,490 4 3

SUMMARY OF WORKS CONSTRUCTED.

The following statement shows the whole of the different classes of works constructed by the Department, either by direct grants or by subsidies to local bodies, during the last twenty-one years (the votes for this purpose having been under the control of the Hon. the Minister of Mines), for the purpose of opening up the mineral belts throughout the colony, and also for the development of the mining industry:—

Nature of Works.	Total Cost of Construction, or Amount authorised to be expended.	Expenditure, by way of Subsidy or otherwise, by Mines Department.	Amount of Liability by Mines Department on Works in Progress.
UP TO YEARS 1882–83 AND 1883–84.	£ s. d.	£ s. d.	£ s. d.
Water-races	29,252 1 11	14,853 9 5	14,398 11 6
Roads on goldfields	21,437 11 2	13,089 16 0	8,347 15 2
Roads and tracks undertaken by County Councils, subsidised by Mines Department	52,841 17 0	21,844 16 7	10,207 15 9
Works undertaken by prospecting associations, subsidised by Mines Department	13,216 13 4	3,350 0 0	3,400 0 0
Construction of drainage and sludge channels, subsidised by Mines Department	5,750 0 0	2,468 15 4	781 4 8
	122,498 3 5	55,606 17 4	37,135 7 1
1884–85.			
Water-races	4,846 1 9	14,596 2 9	4,648 11 6
Roads on goldfields	13,667 10 1	9,630 9 6	12,384 15 9
Roads and tracks undertaken by County Councils, subsidised by Mines Department	13,566 14 1	6,293 16 6	12,739 17 6
Roads to mines, other than gold, subsidised by Mines Department	4,594 10 0	111 19 0	2,888 1 0
Works undertaken by prospecting associations, subsidised by Mines Department	850 0 0	108 0 0	3,692 0 0
Construction of drainage and sludge channels, subsidised by Mines Department	4,050 0 0	1,050 0 0	1,931 4 8
Diamond and other drills	3,600 0 0	1,858 0 0	..
	45,174 15 11	33,648 7 9	38,284 10 5
1885–86.			
Water-races	3,660 4 9	6,063 2 3	6,964 4 4
Roads on goldfields	27,543 18 8	12,360 14 9	27,567 19 8
Roads undertaken by County Councils, subsidised by Mines Department	14,778 2 3	13,048 15 9	12,477 9 2
Roads to mines, other than gold, subsidised by Mines Department	1,551 19 10	4,327 0 10	490 12 8
Works undertaken by prospecting associations, subsidised by Mines Department	11,860 18 0	1,999 5 7	6,389 5 9
Construction of drainage and sludge channels, subsidised by Mines Department	10,051 14 9	3,994 16 6	6,995 9 9
Schools of Mines	2,160 9 7	1,260 9 7	900 0 0
	71,602 7 10	43,049 5 3	61,785 1 4
1886–87.			
Water-races	..	1,928 14 4	3,466 0 8
Roads on goldfields	12,453 3 5	22,229 16 1	17,791 7 0
Roads and tracks undertaken by County Councils, subsidised by Mines Department	12,613 4 8	7,415 19 6	10,455 1 5
Roads to mines, other than gold, subsidised by Mines Department	..	306 1 0	110 18 1
Works undertaken by prospecting associations and companies, subsidised by Mines Department	15,671 19 6	4,521 7 3	4,618 4 7
Construction of drainage and sludge channels, subsidised by Mines Department	5,549 14 6	6,207 18 0	672 6 10
Diamond and other drills	422 15 6	422 15 6	..
Schools of Mines	3,183 7 1	3,383 7 1	700 0 0
	49,894 4 8	46,415 18 9	37,813 13 7

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SUMMARY OF WORKS CONSTRUCTED—*continued.*

Nature of Works.	Total Cost of Construction, or Amount authorised to be expended.	Expenditure, by way of Subsidy or otherwise, by Mines Department.	Amount of Liability by Mines Department on Works in Progress.
1887–88.	£ s. d.	£ s. d.	£ s. d.
Water-races	6 6 6	6 6 6	..
Roads on goldfields	6,860 4 3	17,281 11 3	7,370 0 0
Roads and tracks undertaken by County Councils, subsidised by Mines Department	2,998 15 0	8,012 5 2	3,942 4 2
Roads to mines, other than gold, subsidised by Mines Department	..	14 5 4	..
Works undertaken by prospecting associations and companies, subsidised by Mines Department	6,456 8 0	2,703 19 3	924 8 0
Construction of drainage and sludge channels, subsidised by Mines Department	..	1,110 4 11	2,054 10 6
Schools of Mines	1,859 3 7	2,221 19 4	337 4 3
Aids to treatment of ores	1,200 0 0	390 18 3	209 1 9
	19,380 17 4	31,741 10 0	14,837 8 8
1888–89.			
Roads on goldfields	10,253 5 3	4,304 3 9	13,218 11 6
Roads and tracks undertaken by County Councils, subsidised by Mines Department	7,318 1 0	2,466 16 8	5,195 6 1
Works undertaken by prospecting associations and companies, subsidised by Mines Department	474 0 0	236 0 0	687 8 0
Construction of drainage and sludge channels, subsidised by Mines Department	..	54 10 6	..
Wharves, contributions by Mines Department	589 19 5	96 6 0	343 13 5
Aids to treatment of ores, subsidised	..	209 1 9	..
Schools of Mines	895 16 10	1,188 6 10	44 14 3
	19,531 2 6	8,555 5 6	19,489 13 3
1889–90.			
Roads on goldfields	3,834 9 7	9,148 5 9	8,005 5 4
Roads and tracks undertaken by County Councils, subsidised by Mines Department	8,507 15 8	3,451 17 11	5,928 1 3
Works undertaken by prospecting associations and companies, subsidised by Mines Department	..	..	663 0 0
Water-races	2,200 0 0	719 0 0	681 0 0
Wharves	..	150 0 0	198 13 5
Schools of Mines	1,040 0 8	1,034 0 11	50 14 0
Aids to treatment of ores	142 8 9	142 8 9	..
Tracks to open up mineral lands	1,000 0 0	207 3 6	792 16 6
Diamond drills	425 14 5	425 14 5	..
	17,150 9 1	15,278 11 3	16,314 10 6
1890–91.			
Roads on goldfields	8,811 14 4	10,815 14 8	5,201 5 0
Roads and tracks undertaken by County Councils, subsidised by Mines Department	2,703 5 0	2,252 5 5	5,027 8 4
Works undertaken by prospecting associations and companies, subsidised by Mines Department	..	..	663 0 0
Water-races	5,542 19 8	6,234 4 6	..
Wharves	..	39 9 9	..
Schools of Mines	3,847 10 0	3,898 4 0	..
Tracks to open up mineral lands	..	78 4 7	419 19 5
	20,905 9 0	23,318 2 11	11,311 12 9
1891–92.			
Roads on goldfields	14,226 5 1	8,460 0 3	11,767 9 10
Roads and tracks undertaken by County Councils, subsidised by Mines Department	3,162 0 0	1,720 18 6	4,937 10 2
Works undertaken by prospecting associations and companies, subsidised by Mines Department	1,455 5 5	336 15 9	1,663 0 0
Water-races	2,256 13 6	2,256 13 6	..
Wharves	..	..	..
Schools of Mines	1,370 19 9	1,370 19 9	..
Tracks to open up mineral lands	40 0 0	41 16 0	418 3 7
	22,511 3 9	14,187 3 9	18,786 3 7
1892–93.			
Roads on goldfields	15,199 2 4	17,325 10 0	9,628 6 10
Roads and tracks undertaken by County Councils, subsidised by Mines Department	550 0 0	1,033 0 0	4,831 9 10
Works undertaken by prospecting associations and companies, subsidised by Mines Department	970 4 9	865 4 3	1,768 0 6
Water-races	3,811 1 10	3,811 1 10	..
Wharves	..	..	..
Schools of Mines	1,232 4 4	1,232 4 4	..
Tracks to open up mineral lands	..	..	419 19 5
Artesian-well boring, Maniototo Plains	550 0 0	281 3 6	268 16 6
	22,312 13 3	24,548 3 11	16,916 13 1

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SUMMARY OF WORKS CONSTRUCTED—*continued*.

Nature of Works.	Total Cost of Construction, or Amount authorised to be expended.	Expenditure, by way of Subsidy or otherwise, by Mines Department.	Amount of Liability by Mines Department on Works in Progress.
1893–94.	£ s. d.	£ s. d.	£ s. d.
Roads on goldfields	18,418 19 2	15,056 0 11	13,013 18 5
Roads and tracks undertaken by County Councils, subsidised by Mines Department	5,038 11 6	2,718 17 8	5,576 10 7
Works undertaken by prospecting associations and companies, subsidised by Mines Department	2,245 19 4	1,709 18 5	1,027 7 11
Water-races	5,271 17 1	5,271 17 1	900 0 0
Drainage-channels	..	..	1,000 0 0
Wharves	..	..	..
Schools of Mines	1,555 19 9	1,555 19 9	..
Tracks to open up mineral lands	..	..	..
Repairing flood damages	500 0 0	500 0 0	..
Artesian-well boring, Maniototo Plains	800 0 0	518 16 6	..
	33,831 6 10	27,331 10 4	21,517 16 11
1894–95.			
Roads on goldfields	20,908 13 7	15,160 3 5	18,752 10 7
Roads and tracks undertaken by County Councils, subsidised by Mines Department	685 18 4	2,295 9 2	1,934 5 7
Works undertaken by prospecting associations and companies, subsidised by Mines Department	10,805 15 4	2,378 13 2	3,006 13 0
Water-races	4,801 19 7	2,427 10 11	2,151 18 8
Drainage-channels	1,521 0 0	673 14 10	3,647 5 2
Wharves	..	..	..
Schools of Mines	999 8 6	999 8 6	..
Tracks to open up mineral lands	..	..	..
Repairing flood damages	..	..	..
Artesian-well boring, Maniototo Plains	505 19 11	505 19 11	..
Diamond drills	..	..	..
	40,228 15 8	24,440 19 11	29,492 13 0
1895–96.			
Roads on goldfields	14,554 0	19,970 6 6	14,086 4 8
Roads and tracks undertaken by County Councils, subsidised by Mines Department	4,614 11 1	1,607 8 6	4,290 16 11
Works undertaken by prospecting associations and companies, subsidised by Mines Department	3,477 7 0	1,726 4 8	10,093 3 0
Water-races	6,820 18 3	5,162 9 2	2,515 7 9
Drainage-channels	5,100 0 0	2,240 5 1	2,657 0 1
Wharves	..	..	..
Schools of Mines	999 3 0	999 3 0	..
Tracks to open up mineral lands	..	..	..
Repairing flood damages	..	..	..
Artesian-well boring, Maniototo Plains	..	..	..
Diamond drills	216 1 6	216 1 6	..
	35,782 1 5	31,921 18 5	33,642 12 5
1896–97.			
Roads on goldfields	57,685 9 6	30,720 12 7	35,622 15 3
Roads and tracks undertaken by County Councils, subsidised by Mines Department	11,677 0 0	1,759 6 5	4,079 18 3
Works undertaken by prospecting associations and companies, subsidised by Mines Department	1,570 7 3	1,583 6 7	2,915 14 3
Water-races	3,090 11 1	3,927 18 0	1,678 0 10
Drainage-channels	1,409 0 0	2,149 3 11	2,516 16 2
Wharves	..	..	..
Schools of Mines	1,682 19 5	1,682 19 5	..
Tracks to open up mineral lands	..	..	..
Repairing flood damage	..	..	..
Artesian-well boring, Maniototo Plains	..	..	..
Resumption of land	300 0 0	300 0 0	..
Prospecting deep levels	25,500 0 0	2,697 14 5	22,802 5 7
	102,915 7 3	44,771 1 4	69,615 10 4
1897–98.			
Roads on goldfields	71,318 11 7	37,410 14 3	33,907 17 4
Roads and tracks undertaken by County Councils, subsidised by Mines Department	25,151 9 8	12,158 6 7	9,677 14 0
Works undertaken by prospecting associations and companies, subsidised by Mines Department	3,939 8 1	2,357 15 1	1,581 13 0
Water-races	3,275 8 9	2,272 5 0	1,003 3 9
Drainage-channels	4,481 14 0	1,212 14 9	3,268 19 3
Schools of Mines	1,780 17 3	1,780 17 3	..
Prospecting deep levels	25,500 0 0	21,520 15 0	1,281 10 7
Water-conservation	507 3 9	507 3 9	..
Construction of telephone-lines	60 0 0	50 0 0	..
Compensation proclamation of rivers	5,196 13 10	5,196 13 10	..
	141,211 6 11	84,467 5 6	50,720 17 11

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SUMMARY OF WORKS CONSTRUCTED—*continued.*

Nature of Works.	Total Cost of Construction, or Amount authorised to be expended.	Expenditure, by way of Subsidy or otherwise, by Mines Department.	Amount of Liability by Mines Department on Works in Progress.
1898–99.	£ s. d.	£ s. d.	£ s. d.
Roads on goldfields	48,201 0 2	42,358 8 6	39,825 9 0
Roads and tracks undertaken by County Councils, subsidised by Mines Department	21,025 12 0	4,191 7 9	5,914 7 5
Works undertaken by prospecting associations and companies, subsidised by Mines Department	2,936 11 8	2,143 14 1	1,103 13 1
Water-races	3,853 16 5	2,932 12 1	1,719 6 3
Drainage-channels	3,539 7 5	2,426 13 5	3,802 16 4
Schools of Mines	1,450 15 2	1,450 15 2	..
Prospecting deep levels	25,500 0 0	1,281 10 7	..
Water-conservation	12,483 13 1	7,893 19 4	..
Construction of telephone-lines	..	..	..
Compensation proclamation of rivers	676 0 8	676 0 8	..
	119,666 16 7	65,355 1 7	52,365 12 1
1899–1900.			
Roads on goldfields	46,442 15 10	44,258 2 6	42,010 2 4
Roads and tracks undertaken by County Councils, subsidised by Mines Department	4,625 0 0	2,865 7 4	5,011 0 11
Works undertaken by prospecting associations and companies, subsidised by Mines Department	2,549 7 2	1,400 9 6	1,784 3 0
Water-races	7,909 5 11	8,430 14 0	963 11 10
Drainage-channels	1,090 0 0	1,435 7 5	2,627 14 7
Schools of Mines	1,866 13 3	1,866 13 3	..
Prospecting deep levels	..	..	..
Water-conservation	6,925 10 9	6,925 10 9	..
Resumption of land	2,812 7 0	2,812 7 0	..
Compensation proclamation of rivers	811 0 0	811 0 0	..
Aid towards the treatment of ores	915 1 4	915 1 4	..
	75,947 1 3	71,720 13 1	52,396 12 8
1900–1.			
Roads on goldfields	48,835 2 1	44,757 0 1	46,088 4 4
Roads and tracks undertaken by County Councils, subsidised by Mines Department	1,495 8 2	2,882 6 2	3,133 4 10
Works undertaken by prospecting associations and companies, subsidised by Mines Department	2,353 5 10	1,266 11 7	1,033 7 9
Water-races	3,954 1 6	4,251 19 8	50 0 0
Drainage-channels	2,058 0 0	517 0 4	927 7 3
Schools of Mines	1,598 2 1	1,598 2 1	..
Prospecting deep levels	..	..	..
Water-conservation	2,680 19 1	3,787 17 9	..
Resumption of land	..	..	..
Compensation proclamation of rivers	6,083 18 9	6,083 18 9	..
Aid towards the treatment of ores	778 1 0	778 1 0	..
	69,886 18 6	65,922 17 5	51,282 4 2
1901–2.			
Roads on goldfields	80,602 9 4	44,697 10 0	35,904 19 4
Roads and tracks undertaken by County Councils, subsidised by Mines Department	34,216 16 8	2,847 17 3	1,909 0 11
Works undertaken by prospecting associations and companies, subsidised by Mines Department	2,578 10 8	1,509 10 9	1,826 6 2
Water-races	5,860 3 5	6,665 15 1	1,760 16 1
Drainage-channels	1,005 1 8	889 4 6	1,390 3 7
Schools of Mines	2,087 13 8	2,087 13 8	..
Prospecting deep levels	..	..	..
Water-conservation	2,114 12 5	942 13 10	1,171 19 7
Resumption of land	..	..	..
Compensation proclamation of rivers	5,318 2 9	5,318 2 9	..
Aid towards the treatment of ores	77 17 0	27 17 0	50 0 0
	133,861 7 7	64,986 4 10	44,013 5 10
1902–3.			
Roads on goldfields	62,389 0 5	50,280 12 3	48,063 7 6
Roads and tracks undertaken by County Councils, subsidised by Mines Department	2,285 0 0	1,409 0 8	1,512 1 11
Works undertaken by prospecting associations and companies, subsidised by Mines Department	1,595 17 0	1,131 0 4	1,821 17 7
Water-races	6,122 11 11	5,316 10 3	..
Drainage-channels	2,896 14 2	1,567 13 8	2,454 14 9
Schools of Mines	2,533 14 2	2,533 14 2	..
Prospecting deep levels	..	..	..
Water-conservation	2,535 0 10	2,982 0 5	725 0 0
Resumption of land	..	..	..
Proclamation of rivers	13,215 10 8	13,215 10 8	..
Aid towards the treatment of ores	50 12 5	50 12 5	..
	93,624 1 7	78,436 14 10	54,577 1 9

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SUMMARY OF WORKS CONSTRUCTED—*continued.*

Nature of Works.	Total Cost of Construction, or Amount authorised to be expended.	Expenditure, by way of Subsidy or otherwise, by Mines Department.	Amount of Liability by Mines Department on Works in Progress.
SUMMARY.	£ s. d.	£ s. d.	£ s. d.
Roads on goldfields	516,896 7 11	468,833 0 5	48,068 7 6
Subsidised roads and tracks	173,799 1 5	102,708 12 1	1,512 1 11
Subsidised roads and tracks other than on goldfields ..	6,146 9 10	4,759 6 2	..
Prospecting	82,082 12 10	31,278 16 11	1,821 17 7
Water-races	100,514 8 8	97,128 6 4	..
Wharves	435 15 9	285 15 9	..
Schools of Mines	32,144 18 1	32,144 18 1	..
Drainage-channels	42,813 10 10	27,997 3 2	2,454 14 9
Diamond drills	5,170 11 4	3,428 11 4	..
Treatment of ores	3,164 0 6	2,514 0 6	..
Tracks to open up mineral lands	325 8 1	325 8 1	..
Artesian-well boring, Maniototo Plains	800 0 0	800 0 0	..
Repairing flood damages	500 0 0	500 0 0	..
Prospecting deep levels	51,000 0 0	25,500 0 0	..
Resumption of land	3,112 7 0	3,112 7 0	..
Water-conservation	23,764 5 10	23,089 5 10	725 0 0
Construction of telephone-lines	60 0 0	50 0 0	..
Proclamation of rivers	31,301 6 8	31,301 6 8	..
	1,074,031 4 9	855,701 18 4	54,577 1 9

LIST of WORKS on GOLDFIELDS undertaken wholly by the Mines Department, or by Subsidies to County Councils, Local Bodies, and Prospecting Associations, in Progress on the 31st March, 1903.

Locality and Nature of Works.	Total Cost, or Amount authorised.	Amount of Contribution paid by Mines Department.	Amount due by Mines Department on Works still in Progress
NORTH ISLAND.			
ROADS (SUBSIDISED).			
Thames County.	£ s. d.	£ s. d.	£ s. d.
Road Taniwha to 4th Branch Tairua River	200 0 0	..	100 0 0
Thames Borough.			
Clearing *débris*, Waiotahi Creek	225 0 0	112 10 0	112 10 0
Ohinemuri County.			
Low-level tunnel, Jubilee Mine (E. Kersey Cooper) ..	1,500 0 0	651 0 0	99 0 0
Piako County.			
Repairs Waiorongomai Tramway	150 0 0	..	75 0 0
MIDDLE ISLAND.			
ROADS (SUBSIDISED).			
Buller County.			
Long Tunnel–Addison's	500 0 0	..	250 0 0
Grey County.			
Protective works, Big Grey Bridge	200 0 0	79 8 1	20 11 11
New River Bank Road	300 0 0	..	150 0 0
Widening "Frollis" Track	400 0 0	..	200 0 0
Repairs No Town Creek Bridge	200 0 0	110 0 0	15 0 0
Paparoa track to Garden Gully	200 0 0	..	100 0 0
	1,300 0 0	189 8 1	485 11 11
Tuapeka County.			
Fitzgerald's Bridge	1,500 0 0	410 0 0	340 0 0
Knapdale Road Board.			
Maitland Village to Mining Reserve	100 0 0	..	50 0 0

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List of Works on Goldfields, &c.—*continued.*

Locality and Nature of Works.	Total Cost, or Amount authorised.	Amount of Contribution paid by Mines Department.	Amount due by Mines Department on Works still in Progress.
Works under construction wholly by Mines Department.	£ s. d.	£ s. d.	£ s. d.
Opitonui Footbridge	90 0 0	65 0 0	25 0 0
Gumtown Road (repairs)	100 0 0	..	100 0 0
Repairs, Kaituna Bridge	69 0 0	20 0 0	49 0 0
Repairs, Ford's Creek Bridge	40 0 0	..	40 0 0
Approaches, Moonlight Bridge	35 0 0	..	35 0 0
Repairs, Upper Calary Track	50 0 0	..	50 0 0
South Road (repairs)	200 0 0	..	200 0 0
Milltown Road	220 0 0	22 8 0	197 12 0
Edge's Coal-pit Road	150 0 0	..	150 0 0
Prospecting tracks, Rimu	75 0 0	..	75 0 0
Cabbage Bay–Port Charles and Cape Colville	2,499 0 0	2,272 0 0	227 0 0
Tairua–Whenuakite	850 0 0	700 0 0	150 0 0
Tokatea–Kennedy Bay	1,085 0 0	935 0 0	150 0 0
Coromandel–Kuaotunu, *vid* Matarangi	1,921 0 0	1,593 0 0	328 0 0
Tiki-Kaimarama	985 10 0	785 10 0	200 0 0
Tiki–Manaia	1,548 13 0	1,483 11 3	65 1 9
Manaia–Waikawau	5,095 0 0	4,545 0 0	550 0 0
Mercury Bay–Whenuakite and Boat Harbour	600 0 0	500 0 0	100 0 0
Kuaotunu–Mercury Bay	1,422 11 6	1,322 11 6	100 0 0
Whitianga–Gumtown	900 0 0	609 6 6	290 13 6
Coromandel–Whangapoua	1,603 0 0	1,303 0 0	300 0 0
Kikowhakarere–Cabbage Bay	1,066 0 0	850 0 0	216 0 0
Wharf Road–Coromandel	1,378 12 6	1,178 12 6	200 0 0
Whitianga–Kaimarama	953 0 0	698 3 0	254 17 0
Mahakirau Goldfield Road	398 19 3	320 0 0	78 19 3
Tiki-Te Koumu	400 0 0	250 0 0	150 0 0
Opitonui Road	977 0 0	838 0 0	139 0 0
Ohuka Creek Bridge	470 0 0	250 0 0	220 0 0
Four-in-hand Road	429 18 0	329 18 0	100 0 0
Opitonui Bridge	400 0 0	200 0 0	200 0 0
Waiwawa River Bridge	500 0 0	400 0 0	100 0 0
Gumtown Road	824 0 0	724 0 0	100 0 0
Mahaki Goldfield Track	300 0 0	250 0 0	50 0 0
Driving Creek School Bridge, Tokatea Road	400 0 0	100 0 0	300 0 0
Waitaia Mine to Battery	300 0 0	260 0 0	40 0 0
Kennedy Bay–Matamataharakeke	100 0 0	..	100 0 0
McColl's Creek Bridge	100 0 0	50 0 0	50 0 0
Karaka Creek (encroachment)	100 0 0	..	100 0 0
Ward's Road–Cape Colville	100 0 0	..	100 0 0
Driving Creek–Tokatea	200 0 0	100 0 0	100 0 0
Track (east side of Range)	200 0 0	..	200 0 0
Opitonui–Mercury Bay	200 0 0	..	200 0 0
Thames–Waikawau	2,573 11 7	2,499 15 3	73 16 4
Thames–Hikutaia	2,292 15 5	2,029 15 5	263 0 0
Upper Tararu Road	1,618 9 11	1,455 19 2	162 10 9
Tapu Creek and Extension	1,606 1 11	1,503 1 11	103 0 0
Turua–Netherton	1,635 0 0	1,435 5 0	199 15 0
Hikutaia–Whangamata "Wires" Track	2,161 7 6	1,961 7 6	200 0 0
Omahu–Whangamata	1,845 0 0	1,645 0 0	200 0 0
Neavesville–Upper Landing	537 0 0	369 14 0	167 6 0
Upper Landing–Tairua	450 0 0	350 0 0	100 0 0
Thames—Whangamata	600 0 0	400 0 0	200 0 0
Whangamata–Wentworth	450 0 0	337 0 0	113 0 0
Karaka Creek Road	100 0 0	..	100 0 0
Hape Creek Road	200 0 0	100 0 0	100 0 0
Waiotahi Road	350 0 0	293 16 5	56 3 7
Waiomo Creek Road	700 0 0	607 0 0	93 0 0
Tapu and Mercury Bay Track	200 0 0	178 0 0	22 0 0
Moanatairi Road	200 0 0	100 0 0	100 0 0
Kaueranga Bridge	600 0 0	299 6 0	300 14 0
Upper Tairua Bridge	250 0 0	93 15 0	156 5 0
Kaueranga Suspension Bridge	150 0 0	..	150 0 0
Maratoto Road	100 0 0	..	100 0 0
Hikutaia–Waihi	3,625 0 0	3,276 14 0	348 6 0
Waitekauri–Golden Cross	2,664 0 0	2,160 15 0	503 5 0
Waihi–Whangamata	1,107 0 0	807 0 0	300 0 0
Paeroa–Te Aroha	905 3 2	796 3 2	109 0 0
Paeroa–Waitoa	2,135 13 4	1,835 13 4	300 0 0
Komata Reefs–Waitekauri	405 0 0	340 0 0	65 0 0
Hikutaia–Waitekauri	1,107 0 0	1,017 0 0	90 0 0
Grace Darling Road	50 0 0	..	50 0 0
Netherton Roads	945 0 0	667 10 0	277 10 0
Hikutaia–Maratoto	394 2 6	296 2 6	98 0 0
Tui Mine Track	599 14 0	431 14 0	168 0 0
Waihi–County Boundary	1,465 0 0	932 10 0	532 10 0
Komata Creek Road	460 0 0	240 0 0	220 0 0
Paeroa–Waihi	570 0 0	525 0 0	45 0 0
Karangahake–Mountain Track	136 0 0	105 0 0	31 0 0
Dividing Range Track to Mangakino	225 0 0	120 0 0	105 0 0
Karangahake Hill Track	200 0 0	158 15 0	41 5 0
Waitawheta Road deviation	420 0 0	327 0 0	93 0 0
Waitekauri Hill Track	100 0 0	..	100 0 0
Mackaytown–Rahu	200 0 0	..	200 0 0

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List of Works on Goldfields, &c.—*continued.*

Locality and Nature of Works.	Total Cost, or Amount authorised.	Amount of Contribution paid by Mines Department.	Amount due by Mines Department on Works still in Progress.
Works under construction wholly by Mines Department—*continued.*	£ s. d.	£ s. d.	£ s. d.
Waitekauri–Jubilee	100 0 0	..	100 0 0
Paeroa–Te Aroha Bridge	500 0 0	..	500 0 0
Komata Drain	100 0 0	82 10 0	17 10 0
Te Aroha–Karangahake–Waitawheta	200 0 0	..	200 0 0
Thompson's Track	4,723 19 11	4,686 19 11	37 0 0
Waihi–Katikati	1,650 0 0	1,500 0 0	150 0 0
Havelock–Tuamarina	679 0 0	529 0 0	150 0 0
Onamalutu–Wakamarina	700 0 0	688 0 0	12 0 0
Cullensville Road and Track	50 0 0	..	50 0 0
Rocky Ferry–Kaituna	600 0 0	..	600 0 0
Bonny Doon Road	1,785 17 7	1,585 17 7	200 0 0
Kaituna–Ferntown	300 0 0	168 0 0	132 0 0
Ferntown–Pakawau	807 0 0	600 0 0	207 0 0
Takaka–Collingwood "Inland" Road	3,773 19 11	3,148 19 11	625 0 0
Bainham–Upper Aorere Valley Road	200 0 0	100 0 0	100 0 0
Taitapu Boundary Track	200 0 0	187 13 6	12 6 6
Pakawau–Tamatea	373 18 0	73 18 0	300 0 0
Bainham Bridge	603 10 0	..	603 10 0
Slate River Road	200 0 0	..	200 0 0
Aorere Bridge (repairs)	250 0 0	..	250 0 0
West Wanganui Inlet Bridge	300 0 0	..	300 0 0
Motueka River Protective Works	280 5 8	..	280 5 8
Wangapeka–Baton	750 0 0	600 0 0	150 0 0
Thorpe–Churchill	300 0 0	200 0 0	100 0 0
Riwaka–Kaiteriteri Beach	204 0 0	100 0 0	104 0 0
Thorpe–Neudorf	200 0 0	100 0 0	100 0 0
Millerton Road	1,300 0 0	750 0 0	550 0 0
Lyell Bridge–Ryan's	1,100 0 0	900 0 0	200 0 0
Wilson's Lead Road	1,100 0 0	850 0 0	250 0 0
Granity Creek South	1,450 0 0	1,200 0 0	250 0 0
North Beach–Karamea	150 0 0	..	150 0 0
Westport–Mokihinui	1,900 0 0	1,400 0 0	500 0 0
Lyell–Victoria Range	150 0 0	..	150 0 0
Costello's Hill Road	1,050 0 0	850 0 0	200 0 0
Addison's Road–Buller Road	1,250 0 0	1,000 0 0	250 0 0
Promised Land–Ohinemuri Creek	300 0 0	100 0 0	200 0 0
Land of Promise Road	700 0 0	500 0 0	200 0 0
Karamea–Mud-flat Road	850 0 0	600 0 0	250 0 0
Mokihinui end of Westport Road	1,050 0 0	900 0 0	150 0 0
Fairdown to Beach	200 0 0	100 0 0	100 0 0
Charleston–Brighton	400 0 0	100 0 0	300 0 0
Brighton–Grey County Boundary	750 0 0	500 0 0	250 0 0
Glass-eye Creek Track	200 0 0	..	200 0 0
Lyell–Cedar Creek	550 0 0	150 0 0	400 0 0
Millerton–Mine Creek	545 0 0	345 0 0	200 0 0
Mokihinui–Ngakawau	1,050 0 0	600 0 0	450 0 0
Waimangaroa–Birchfield	600 0 0	400 0 0	200 0 0
Lyell–Denniston Hill	300 0 0	100 0 0	200 0 0
Mountain Creek–Addison's	100 0 0	..	100 0 0
Britannia Mine Road	400 0 0	200 0 0	200 0 0
Granity Creek–Ngakawau	250 0 0	..	250 0 0
Caledonian Terrace Track	100 0 0	..	100 0 0
Cascade Creek Road	450 0 0	200 0 0	250 0 0
Eight-mile to Mokihinui	200 0 0	..	200 0 0
Burnett's Face to Coalbrookdale	300 0 0	..	300 0 0
Cedar Creek–Denniston	200 0 0	..	200 0 0
Welshman's Flat Bridge	300 0 0	..	300 0 0
Darkie's Hill Road and Bridge	100 0 0	..	100 0 0
Waimangaroa–Granity	300 0 0	..	300 0 0
Fairdown–Sergeant's Hill *vid* Railway	250 0 0	..	250 0 0
Seatonville–Mokihinui Mine	300 0 0	..	300 0 0
Nile Creek Bridge	100 0 0	..	100 0 0
Reefton–Maruia	3,522 8 0	3,374 0 0	148 8 0
Matakitaki–Glenroy–Maruia	1,307 15 6	707 15 6	600 0 0
Mangles Valley Road	1,110 0 0	893 0 0	217 0 0
Blackwater–Big River	600 0 0	450 0 0	150 0 0
Boatman's Valley Road Bridge	435 0 0	390 0 0	45 0 0
Waitahu River Bridge	100 0 0	..	100 0 0
Maruia Road *viâ* Caslani's	438 0 0	188 0 0	250 0 0
Snowey Creek to Reefs	750 0 0	550 0 0	200 0 0
Kirwan's Reward to Battery Site	100 0 0	..	100 0 0
Inglewood–Painkiller	200 0 0	..	200 0 0
Reefton–Progress	300 0 0	20 0 0	280 0 0
Boatman's Road	100 0 0	..	100 0 0
Blackball–Healey's Gully	1,200 0 0	1,150 0 0	50 0 0
Seven-mile Creek–Nine-mile Bluff	1,600 0 0	1,550 0 0	50 0 0
Moonlight–Blackball	350 0 0	325 0 0	25 0 0
Kotuku–Bell Hill	500 0 0	250 0 0	250 0 0
Teremakau Bridge to Payne's Gully	200 0 0	50 0 0	150 0 0
Waipuna–Mosquito	150 0 0	..	150 0 0
Maori Creek–Maori Gully (widening)	250 0 0	..	250 0 0

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List of Works on Goldfields, &c.—*continued.*

Locality and Nature of Works.	Total Cost, or Amount authorised.	Amount of Contribution paid by Mines Department.	Amount due by Mines Department on Works still in Progress.
Works under construction wholly by Mines Department—*continued.*	£ s. d.	£ s. d.	£ s. d.
Grey–Dunganville Road Bridges	250 0 0	150 0 0	100 0 0
Nelson Creek–Bell Hill	500 0 0	250 0 0	250 0 0
Upper Moonlight–Craigieburn	150 0 0	..	150 0 0
Paroa–Teremakau	1,141 0 0	825 0 0	316 0 0
Brown's Creek Bridge–Old Marsden Road	250 0 0	..	250 0 0
Hohonu River Bridge–Cape Terrace	200 0 0	..	200 0 0
Saltwater Creek Bridge	250 0 0	150 0 0	100 0 0
Wataroa Bluff Track	594 4 8	551 15 1	42 9 7
Gillam's Gully Track	800 0 0	774 3 7	25 16 5
Adair's Track (widening)	430 0 0	395 9 1	34 10 11
Seven-mile Creek–Taipo	1,150 0 0	1,020 0 0	130 0 0
Browning's Pass Track	491 0 0	391 0 0	100 0 0
Ogilvie's Beach Road	800 0 0	500 0 0	300 0 0
Kanieri Lake Road	300 0 0	228 4 4	71 15 8
Kanieri Forks Road	450 0 0	353 9 7	96 10 5
Teremakau–Paroa	100 0 0	76 12 0	23 8 0
Dillman's Road–Nos. 4 and 5 Channels	280 0 0	210 6 0	69 14 0
Duffer's Road (widening)	300 0 0	221 5 6	78 14 6
Wataroa Gorge Track	150 0 0	136 1 10	13 18 2
Larrikin's Road extension	200 0 0	..	200 0 0
Back Creek Road and Bridge	100 0 0	84 18 6	15 1 6
Saltwater Track	150 0 0	66 1 8	83 18 4
Whitcombe Valley Road	100 0 0	21 15 0	78 5 0
Waipori–Berwick	200 0 0	..	200 0 0
Outram–Waipori	200 0 0	..	200 0 0
Clarendon–Berwick	400 0 0	377 15 0	22 5 0
Lawrence–Waipori	2,225 0 0	1,800 0 0	425 0 0
Lawrence–Roxburgh	600 0 0	550 0 0	50 0 0
Waitahuna–Lawrence	500 0 0	375 0 0	125 0 0
Waipori–Waitahuna	550 0 0	325 0 0	225 0 0
Waipori Bush Road	750 0 0	650 0 0	100 0 0
Lawrence–County boundary	725 0 0	600 0 0	125 0 0
Waipori–Outram	200 0 0	50 0 0	150 0 0
Beaumont–Rankleburn	100 0 0	50 0 0	50 0 0
Beaumont–Miller's Flat	200 0 0	50 0 0	150 0 0
Waitahuna–Round Hill	200 0 0	100 0 0	100 0 0
Lawrence–Clyde	4,725 0 0	3,950 0 0	775 0 0
Gentle Annie–Clyde	625 0 0	225 0 0	400 0 0
Nevis Valley Road	600 0 0	400 0 0	200 0 0
Cromwell Borough–Lowburn	200 0 0	100 0 0	100 0 0
Ophir Bridge	1,000 0 0	..	1,000 0 0
Clyde–Cromwell (repairs)	500 0 0	..	500 0 0
Cromwell–Nevis	250 0 0	..	250 0 0
Shotover River Track	500 0 0	300 0 0	200 0 0
Garston–Nevis (Lake County)	400 0 0	100 0 0	300 0 0
Crown Terrace–Cardrona	450 0 0	300 0 0	150 0 0
Queenstown–Gentle Annie	425 0 0	125 0 0	300 0 0
Arthur's Point–Moke Creek	260 0 0	150 0 0	110 0 0
Cardrona Coal-pit Road	250 0 0	..	250 0 0
Arrow Falls Road	300 0 0	..	300 0 0
Arthur's Point–Arrowtown	100 0 0	..	100 0 0
Sawyer's Gully Road	100 0 0	..	100 0 0
Road to dredging claims, Waimumu	200 0 0	..	200 0 0
Garston–Nevis (Southland County)	300 0 0	150 0 0	150 0 0
Nokomai Saddle Road	150 0 0	..	150 0 0
Waikaka Valley Main Road (repairs)	200 0 0	..	200 0 0
Central Charlton Road	100 0 0	..	100 0 0
Waikaka to Coal-pit	150 0 0	..	150 0 0
Orepuki to Shale-works	100 0 0	..	100 0 0
Katikati–Waihi	550 0 0	..	550 0 0
Top Valley Road	621 5 8	595 6 2	25 19 6
Picton–Grove	3,251 13 10	2,767 9 8	484 4 2
Mokihinui–Little Wanganui	4,766 14 0	4,758 7 4	8 6 8
Burke's Creek Bridge	200 0 0	30 12 0	169 8 0
Big Ohika Creek Bridge	950 0 0	873 7 1	76 12 11
Blackwater Creek Bridge	200 0 0	..	200 0 0
Inangahua Bridge	1,512 9 9	1,261 0 6	251 9 3
Hokitika–Jackson's	2,232 16 1	2,191 12 1	41 4 0
Reefton–Hokitika–Ross	14,978 11 11	14,616 12 3	361 19 8
Donnelly's Creek Bridge	100 0 0	..	100 0 0
Solberg's Hill	50 0 0	..	50 0 0
Kanieri Bridge	600 0 0	3 17 6	596 2 6
Upjohn's Hill, cutting and culvert	175 0 0	..	175 0 0
Collingwood Bridge	6,148 13 6	4,256 6 3	1,892 7 3
Waimangaroa–Fairdown	300 0 0	..	300 0 0
Main Grey Bridge (repairs)	2,323 1 1	2,129 8 9	193 12 4
Moonlight Creek Bridge	729 14 3	29 14 3	700 0 0
Taylorville Bridge	1,420 0 0	837 7 10	582 12 2
Great South Road	18,588 11 3	18,508 11 3	80 0 0
Okarito Foaks–Waiho	1,837 1 8	1,714 10 5	122 11 3
	208,415 15 10	160,352 8 4	48,063 7 6

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List of Works on Goldfields, &c.—*continued.*

Locality and Nature of Works.	Total Cost, or Amount authorised.	Amount of Contribution paid by Mines Department.	Amount due by Mines Department on Works still in Progress.
Schools of Mines.	£ s. d.	£ s. d.	£ s. d.
Schools of Mines	22,091 18 11	22,091 11 11	..
School of Mines (Otago University)	10,053 6 2	10,053 6 2	..
	32,144 18 1	32,144 18 1	..
Prospecting Subsidies			
Coromandel County	744 0 0	743 0 0	1 0 0
Coromandel County (J. and M. Fitzgerald)	53 1 0	28 1 0	25 0 0
Westland County (Warren and party)	60 0 0	48 6 0	11 14 0
Westland County (Case and party)	80 0 0	16 16 0	63 4 0
Westland County (Holst and party)	28 15 0	..	28 15 0
Westland County (Smith and party)	18 0 0	12 0 0	6 0 0
Westland County (Harvey and McDonald)	86 0 0	12 0 0	74 0 0
Westland County (Stringer and party)	19 10 0	..	19 10 0
Westland County (G. Macarthur)	6 10 0	..	6 10 0
Westland County (Wroblfoski and party)	150 0 0	..	75 0 0
Johnston, Bryan, and party	300 0 0	272 18 0	27 2 0
Victoria Gold-mining Company (Thames foreshore) ..	1,000 0 0	113 10 8	886 9 4
Golden Basin Prospecting Association	435 0 0	146 6 0	288 14 0
Blackwater Miners' Association (Bauman Bros.) ..	81 0 0	17 13 6	63 6 6
Miners' Association, Charleston (Nelson and party) ..	110 0 0	58 2 3	51 17 9
Miners' Association, Nelson Creek (Kelly and party) ..	110 0 0	29 15 0	80 5 0
Miners' Association, Nelson Creek (O'Brien and party) ..	11 5 0	..	11 5 0
Inangahua County, tunnel, Victoria Range	100 0 0	..	51 5 0
Inangahua County (E. Tangey)	6 10 0	..	6 10 0
Collingwood County (Lewis and party)	19 10 0	..	19 10 0
McDonald and Gill, tunnel, Rock and Pillar	25 0 0	..	25 0 0
	3,444 1 0	1,498 8 5	1,821 17 7
Water-races.			
Waimea Kumara Water-race	51,056 3 6	51,056 3 6	..
Mount Ida Water-race	11,257 9 2	11,257 9 2	..
Mountain Hut Water-race	4,831 12 0	4,831 12 0	..
	67,145 4 8	67,145 4 8	..
Drainage- and Tailings-channels.			
Jones Creek Storm-channel	100 0 0	50 0 0	50 0 0
Waimea Main Tail-race	1,905 1 8	1,724 6 8	180 15 0
Waimumu Main Tail-race	1,848 3 0	500 0 0	1,348 3 0
Charlton Creek Main Tail-race	799 12 2	236 5 5	563 6 9
St. Bathan's Channel	3,000 0 0	1,687 10 0	312 10 0
Kelly's Terrace Tunnel	2,667 10 0	2,047 0 6	..
No. 5 Sludge channel (extension)	600 0 0	148 1 0	..
	10,920 6 10	6,393 3 7	2,454 14 9
Water conservation on Goldfields.			
Engineer's salary and expenses	2,423 3 5	2,423 3 5	..
Reports on Drainage, Ross Flat	284 10 8	284 10 8	..
Coromandel Harbour and Kuaotunu Sludge-channels ..	80 12 6	80 12 6	..
Kaiwarra Reservoir	16,446 17 11	16,446 17 11	..
Mackaytown Water-supply	351 0 0	351 0 0	..
Waitekauri Water supply	445 2 5	445 2 5	..
Karangahake Water-supply	607 6 5	607 6 5	..
Clyde Water-supply	1,100 0 0	375 0 0	725 0 0
Home Gully Dam	1,025 12 6	1,025 12 6	..
Thames Drainage Board (contribution)	1,000 0 0	1,000 0 0	..
	23,764 5 10	23,039 5 10	725 0 0
Summary of Works.			
Roads (subsidised)—			
Piako County	150 0 0	..	75 0 0
Thames County	200 0 0	..	100 0 0
Thames Borough	225 0 0	112 10 0	112 10 0
Ohinemuri County	1,500 0 0	651 0 0	99 0 0
Buller County	500 0 0	..	250 0 0
Grey County	1,300 0 0	189 8 1	485 11 11
Knapdale Road Board	100 0 0	..	50 0 0
Tuapeka County	1,500 0 0	410 0 0	340 0 0
	5,475 0 0	1,362 18 1	1,512 1 11
Works under construction wholly by Mines Department ..	208,415 15 10	160,352 8 4	48,063 7 6
Schools of Mines	32,144 18 1	32,144 18 1	..
Prospecting subsidies	3,444 1 0	1,498 8 5	1,821 17 7
Water-races	67,145 4 8	67,145 4 8	..
Drainage-channels	10,920 6 10	6,393 3 7	2,454 14 9
Compensation, proclamation of rivers	31,301 6 8	31,301 6 8	..
Water-conservation on goldfields	23,764 5 10	23,039 5 10	725 0 0
Total	382,610 18 11	323,237 13 8	54,577 1 9

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LIST of WORKS on GOLDFIELDS constructed wholly by the Mines Department, or by Subsidies to County Councils, Local Bodies, and Prospecting Associations, and completed prior to the 31st March, 1903.

Locality and Nature of Works.	Total Cost.			Amount of Contribution paid by Mines Department.		
NORTH ISLAND.						
ROADS (SUBSIDISED).						
Bay of Islands County.	£	s.	d.	£	s.	d.
Tiriwhanga Gorge to Galbraith's Road, Puhipuhi	237	0	0	118	10	0
Air-line Road to battery-site, Puhipuhi	73	0	0	36	10	0
Tiriwhanga Gorge to Puhipuhi	800	0	0	800	0	0
New Bay of Islands Coal Company	500	0	0	250	0	0
Road, Taumarere Railway-station to Puhipuhi	482	0	0	146	0	0
	2,092	0	0	1,351	0	0
Coromandel County.						
Improving road to Iona and Just-in-Time Companies' mines	200	0	0	133	6	8
Making and improving track from Tokatea towards Kennedy Bay	320	0	0	213	6	8
Golden Belt Track	100	0	0	50	0	0
Tokatea Road (repairs)	300	0	0	150	0	0
Making and improving track from Golden Belt to Tiki	239	3	3	159	8	10
Making road from Ring's Bridge to Kapanga Mine	150	0	0	100	0	0
Making road to Kapanga Mine	132	0	0	88	0	0
Temporary track from Tokatea Saddle to Waikoromiko	50	0	0	33	6	8
Continuation of track from Success Company's mine to top of main range	80	0	0	53	6	8
Completion of road from Tokatea Saddle to Tokatea Battery	50	0	0	33	6	8
Widening road from Matawai to Vaughan's claim	357	0	0	238	0	0
Improving track, Mercury Bay to Waitai	100	0	0	66	13	4
Continuation and improving Waikoromiko Track	150	0	0	100	0	0
Emily Battery to Rocky Creek	60	0	0	40	0	0
Track, Bismarck Battery to Kennedy Bay	200	0	0	133	6	8
Road up Manaia	675	10	6	450	7	0
Extension of Vaughan's and Vizard's Tracks	150	0	0	100	0	0
Vizard's towards Marebel	200	0	0	133	6	8
Extending and widening Waitaia Road	100	0	0	66	13	4
Makarau to Waiau	1,600	0	0	1,066	13	4
Waikawau to Tiki	500	0	0	333	6	8
Paul's Creek to Cabbage Bay	200	0	0	133	6	8
Waikawau Creek Track	100	0	0	50	0	0
McLaughlin's Road	100	0	0	50	0	0
Manaia to McGregor's new find	100	0	0	50	0	0
Manaia to Tiki	500	0	0	250	0	0
Old sawmill towards Matawai	200	0	0	100	0	0
Extension of Paul's Creek Track	300	0	0	150	0	0
Matarangi Track	400	0	0	200	0	0
Thames–Coromandel Road, *viâ* Manaia	300	0	0	150	0	0
Harbour View extension	210	0	0	105	0	0
Kapanga to Paul's Creek	200	0	0	100	0	0
Mercury Bay to Kuaotunu	360	0	0	180	0	0
Wainara to Kuaotunu	450	0	0	225	0	0
Sea-beach to Kuaotunu	1,650	0	0	1,450	0	0
Just-in-Time Road, extension to Coromandel	450	0	0	225	0	0
Road, Waikawau Bridge to McLaughlin's	67	10	0	45	0	0
Mercury Bay Road	990	0	0	495	0	0
Bridge to Dugend's store, and widening and metalling road from bridge to Log Hut	450	0	0	300	0	0
Road from junction of Red Mercury battery up Pumpkin Flat to Waitaia	345	0	0	230	0	0
To connect road from Log Hut to commencement of contract of Kuaotunu–Mercury Bay Road	150	0	0	100	0	0
Road, with culverts and bridge, from Kapanga Hill to Scotty's Gold-mining Company's mine	200	0	0	150	0	0
Pumpkin Flat–Just-in-Time Road	310	0	0	170	0	0
Lower road from Great Mercury battery to Kapai low level and battery-site	450	0	0	300	0	0
Road from main road, Kapanga to Success Mine	600	0	0	300	0	0
Cemetery Road and Bridge, Kuaotunu	100	0	0	75	0	0
Road from Coromandel–Kennedy Bay Main Road to Wereroa Creek	300	0	0	150	0	0
Leading Wind Mine Road	100	0	0	50	0	0
Fury's Bridge	450	0	0	225	0	0
Carroll's Bridge	400	0	0	200	0	0
Horne's Bridge	200	0	0	100	0	0
Road from Main Kennedy Bay Road to Monte Carlo and other claims	300	0	0	150	0	0
Castle Rock Mine Road, Tiki	200	0	0	100	0	0
Road between Bismarck Battery and Hauraki Associated Gold-reefs	400	0	0	200	0	0
Bridge, Warekaho Creek	300	0	0	150	0	0
Cabbage Bay to Mines	300	0	0	150	0	0
Two bridges and approaches, Kuaotunu Main Road	300	0	0	150	0	0
Road from Success Road to workings of Karaka Block Syndicate	200	0	0	100	0	0
Widening Waitaia Battery Road	100	0	0	50	0	0
Cabbage Bay–Waitete	240	0	0	120	0	0
Cabbage Bay–Ward's Track	200	0	0	100	0	0
Repairs, bridges, Kuaotunu Main Road	200	0	0	100	0	0
Coromandel–Mercury Bay	200	0	0	35	0	0
	19,286	3	9	11,455	15	10

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List of Works on Goldfields, &c.—*continued.*

Locality and Nature of Works.	Total Cost.	Amount of Contribution paid by Mines Department.
	£ s. d.	£ s. d.
Te Aroha Town Board.		
Road to connect with railway-station	120 0 0	60 0 0
Lipsey's Bridge	64 0 0	32 0 0
Repairing flood-damages	150 0 0	75 0 0
	334 0 0	167 0 0
Thames County.		
Making new road from Ohinemuri River to Karangahake Quartz-mine	650 0 0	433 6 8
Dray-road to connect Otanui Mines with crushing-battery at Maungawherawhera Creek	710 0 0	473 6 8
Improving roads from Waitekauri Road to Katikati Road	250 0 0	166 13 4
Improving road up Karaka Creek to Lucky Hit Company's mine	263 1 0	175 7 4
Improving road to upper mines, Waitahi	258 18 10	172 12 7
Karangahake to battery	300 0 0	200 0 0
Ralph's Battery, Waitekauri	299 1 0	199 10 6
Otanui Road to mines	299 18 0	199 18 8
Road to Wick's Battery	70 0 0	46 13 4
Rocky Point Road, Tararu	300 0 0	200 0 0
Thames Borough boundary to hæmatite-mine	350 0 0	233 6 8
Widening road from bridge over Hape Creek to Otanui Mines	183 17 0	122 11 4
Track, Karangahake Goldfield	784 1 0	522 14 0
Kauaeranga Valley to Otanui	470 7 0	313 11 4
Tapu Road to mines	81 17 9	54 11 10
Tauranga Road to Karangahake Bridge site	341 5 0	227 10 0
Karangahake Bridge	229 6 6	152 17 8
Track up Maungakerikeri Creek	93 4 4	62 2 11
Thames Borough boundary to Hape Creek No. 2	600 0 0	300 0 0
Upper Karaka Road	179 18 0	119 15 4
Repairing flood-damages, Waiotahi, Moanataiari, Karaka, and Collarbone Roads	350 0 0	175 0 0
Sea-beach to Waiomo	750 0 0	375 0 0
Te Papa Gully Road	75 0 0	37 10 0
New Find to Waiomo Battery	110 0 0	55 0 0
Rocky Point Road	429 11 10	214 15 11
Waiotahi towards Mercury Bay	522 11 0	261 5 6
Te Mata Road	178 17 6	89 8 9
Waiomo Creek to Tapu	1,499 0 0	749 10 0
Alabama Creek Track	100 0 0	50 0 0
Road from Prospectors' Mine, Puriri, to battery	50 0 0	25 0 0
Karaka Creek to Lucky Hit	365 0 0	182 10 0
Bullion Mine, Tapu, to battery	36 5 0	18 2 6
Track to Hikutaia Goldfield	147 15 2	73 17 7
Upper Tararu Road to Sylvia Mine	684 7 0	342 3 6
Road to Puriri Battery	11 13 0	5 16 6
Thames–Waikawau Road	37 10 0	18 15 0
Track from Tararu Creek Road to McDermot's Claim	45 0 0	22 10 0
Track to Try Fluke Claim, Tapu	94 15 0	47 7 6
Waiomo to Puhoi Creek	33 0 0	16 10 0
Waiokaraka Road, Bella Street, and Campbell Street to Moanataiari Creek	200 0 0	100 0 0
Moanataiari Creek Road	100 0 0	50 0 0
Tararu Creek Road and Tararu Road	150 0 0	75 0 0
Hape Creek Road	150 0 0	75 0 0
Omahu–Tairua	100 0 0	42 0 0
Karaka Creek Road	150 0 0	68 4 6
Onetai Valley Road	40 0 0	12 10 0
Townsend's Road	30 0 0	26 12 0
Gumtown–Kapowai	300 0 0	196 9 0
Footbridge, Pepe Creek	300 0 0	51 18 6
	13,854 15 11	7,834 6 11
Thames Borough.		
Repairing roads	975 19 2	600 0 0
Widening and straightening Karaka Creek	300 0 0	150 0 0
Metalling goldfields roads	800 0 0	672 12 6
Removing *débris*, Karaka Creek	300 0 0	150 0 0
Half-cost damage, Hawk's stable	96 0 0	48 0 0
Repairs, Moanataiari Creek Tunnel	100 0 0	52 0 0
Repairs, Moanatairi and Waiotahi Aqueducts	620 0 0	375 0 0
Repairs, Waiotahi Creek Bridge	50 0 0	25 0 0
Removing *débris*, Karaka and Waiotahi Creeks	350 0 0	275 0 0
Water-tables, Kirkwood Street	20 0 0	11 12 6
	3,611 19 2	2,359 5 0
Ohinemuri County.		
Jubilee Mine Track	118 0 0	59 0 0
Track up Tui Creek	306 0 0	153 0 0
Prospecting-track, Whangamata and Waitekauri	200 0 0	166 13 4
Tramway, Karangahake to Railey's reduction-works	400 0 0	200 0 0
Strengthening bridges, Waihi Road	200 0 0	133 6 8
Paeroa to Hikutaia	400 0 0	200 0 0
Repairs, flood-damages	34 18 8	17 6 10
Hikutaia River to Marototo Mine	180 15 0	90 7 6

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List of Works on Goldfields, &c.—*continued.*

Locality and Nature of Works.	Total Cost.			Amount of Contribution paid by Mines Department.		
Ohinemuri County—continued.	£	s.	d.	£	s.	d.
Karangahake through Gorge (bridge and culverts)	200	0	0	100	0	0
Waitekauri Lower Road	360	0	0	189	2	8
Metalling Karangahake Gorge Road	170	0	0	85	0	0
Karangahake and Waihi Road	237	10	0	118	15	0
Karangahake Hill Track	87	4	0	43	12	0
Bridge over Ohinemuri River at Karangahake	12	11	0	6	5	6
Hikutaia–Paeroa Road	500	0	0	250	0	0
Paeroa–Te Aroha Road	200	0	0	100	0	0
Tui Creek Track	129	18	6	64	19	3
Waitekauri to Lowrie's and Birnie's	200	0	0	100	0	0
Road, Karangahake to Waihi	246	12	3	164	8	2
Lower Waitekauri Road	347	13	4	230	16	4
Road, Thames Road to Netherton Punt	60	0	0	50	0	0
Komata Creek Road	600	0	0	300	0	0
Road, Paeroa Bridge to Kuaoti Creek	400	0	0	133	6	8
Punt at south end Netherton–Paeroa Road	275	0	0	175	0	0
Repairs, Waitekauri Township Road	200	0	0	100	0	0
Bridge, Paeroa–Te Aroha Road	60	0	0	30	0	0
Karangahake Bridge	1,032	0	0	512	16	9
Drain along Mill Road, Paeroa	200	0	0	90	2	5
Road, Te Iringa-o-Pirori Block	200	0	0	143	0	0
Road running south on left bank Waihou River	400	0	0	384	19	0
Kaimanawa Road	200	0	0	126	2	6
Mangaiti and Waitoa Road and Punt	200	0	0	119	7	10
Earl of Glasgow Claim Track	400	0	0	300	0	0
	8,757	17	9	4,937	8	5
Waitoa Road Board.						
Drain, Te Aroha West	200	0	0	130	0	0
Piako County.						
Extension and completion of Te Aroha Tramway	18,000	0	0	12,000	0	0
Tramway to Fergusson's Battery, Waiorongomai	1,500	0	0	1,000	0	0
Road, Waiorongomai	497	17	0	331	18	0
Track to claims at Buck's Reef	55	5	6	36	17	0
Track, Fern Spur to Butler's Spur	231	17	9	154	11	10
Tracks up Stony Creek, Te Aroha Goldfield, &c.	54	0	0	36	0	0
Repairs, Upper Premier Track and new track towards Waitawheta	40	0	0	20	0	0
Repairs, Te Aroha–Lichfield Road	302	0	0	125	0	0
Waiorongomai Tramway	263	2	0	175	0	0
Gordon–Waharoa	100	0	0	50	0	0
Te Aroha–Gordon	200	0	0	100	0	0
Murphy's Bridge	24	0	0	12	0	0
Repairs, Waiorongomai Tramway	500	0	0	285	0	0
Waihou Bridge	580	0	0	290	0	0
	22,348	2	3	14,616	6	10
Katikati Road Board.						
Katikati–Karangahake Track	400	0	0	200	0	0
Bridge on branch road to Katikati	68	0	0	34	0	0
Te Aroha Track	39	19	6	19	18	9
	507	19	6	253	18	9
Hutt County.						
Road to connect Otorongo Bay with Albion Company's battery, also to connect Terawhiti Quartz-mine with battery	509	16	6	210	17	0
Road, Makara Junction to Terawhiti	450	0	0	225	0	0
	959	16	6	435	17	0

SOUTH ISLAND.

Roads (subsidised).

Marlborough County.						
Track, Deep Creek to Dead Horse Creek	68	0	0	45	6	8
Mouth of Gorge to Forks, Cullensville to Mahakipawa Diggings	450	0	0	225	0	0
Formation of road at Cullensville, Mahakipawa	217	4	0	108	12	0
Havelock–Mahakipawa Road	905	0	0	505	0	0
Dead Horse Creek to Sunnyside	75	0	0	50	0	0
	1,715	4	0	933	18	8
Waimea County.						
Road to open up Table Diggings	260	0	0	130	0	0
Punt over Motueka River	100	0	0	50	0	0
Repairing Baton to Table-land Track	40	0	0	20	0	0
Dove River to Baton Saddle, and from Rolling River to Wangapeka Saddle	120	0	0	60	0	0
Repairs, Motueka Bridge	939	8	8	469	14	4
	1,459	8	8	729	14	4

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LIST of WORKS on GOLDFIELDS, &c.—*continued.*

Locality and Nature of Works.	Total Cost.			Amount of Contribution paid by Mines Department.		
Collingwood County.	£	s.	d.	£	s.	d.
Road, West Wanganui	300	0	0	200	0	0
Bridge over Aorere River	173	14	0	115	16	0
xtending Anatoki Bridle-track	160	0	0	80	0	0
Bridge over Takaka River at Pain's Ford	1,597	7	8	798	13	10
Repairs, Silverstream Bridge, and forming and metalling Bainham Road	200	0	0	100	0	0
Kaituna–Ferntown	250	0	0	150	0	0
Takaka roads	600	0	0	400	10	0
Collingwood–Kaituna	400	0	0	295	9	11
	3,681	1	8	2,140	9	9
Buller County.						
Deviation of road from Candlelight Flat to Deep Creek, Charleston	370	0	0	246	13	4
Road from Orowaiti Lagoon to North Terrace	256	18	6	171	5	8
Prospecting track from Razorback to Paparoa Range	100	0	0	66	13	4
Track from Seatonville to Larrikin's	438	9	6	292	6	4
Waimangaroa to Denniston	787	0	0	393	10	0
Road to connect alluvial workings with Charleston Road	400	0	0	266	13	4
Track, Four-mile Creek towards Grey Valley	300	0	0	200	0	0
Road to connect alluvial diggings north of Deadman's Creek	278	0	0	185	6	8
Ngakawau to Mokihinui, *viâ* beaches	100	0	0	66	13	4
Road to connect Ngakawau Railway with Mokihinui Coal Company's workings	193	0	0	128	13	4
Lyell Bluff to Victor Emmanuel Claim	650	0	0	433	6	8
Beach, Little Wanganui to Mokihinui	300	0	0	100	0	0
Cape Foulwind Road	450	0	0	300	0	0
Road up Nile Valley	56	16	4	28	8	2
Denniston extension	850	0	0	425	0	0
Promised Land towards Motueka	380	0	0	190	0	0
Road over Gentle Annie	200	0	0	100	0	0
Extension, Lyell Creek to Low-level Tunnel	60	0	0	30	0	0
Extension of track 50 chains south of Brighton	140	0	0	70	0	0
Continuation of road, Deadman's Creek	437	17	0	218	18	6
Ngakawau Railway-station to Mokihinui	50	0	0	25	0	0
Addison's Flat towards ranges	20	0	0	10	0	0
North Terrace to Oparara Diggings	500	0	0	333	6	8
Extension of Croninville Road	100	0	0	50	0	0
Waimangaroa to sea-beach	80	0	0	40	0	0
Extension of track, Oparara to Fenian Creek	100	0	0	50	0	0
Con's Creek to Beaconsfield	80	0	0	40	0	0
Addison's Flat to Caroline Terrace	200	0	0	100	0	0
Waimangaroa to sea-beach extension	390	0	0	195	0	0
Addison's Flat to Gallagher's Lead	50	0	0	25	0	0
Road to Swanston's Gold-mining Company	50	0	0	25	0	0
Repairs to roads at Lyell	200	0	0	100	0	0
Track, Fairdown from North Terrace	150	0	0	97	8	0
Improving road to Four-mile Creek, Charleston	900	0	0	450	0	0
Bridge, Waimangaroa River	70	0	0	35	0	0
Road to Piper's Flat, Addison's	450	0	0	150	0	0
Lyell Creek to Gibstown	200	0	0	66	13	4
Buller River Footbridge below Lyell	250	0	0	170	0	0
Virgin Flat Road	200	0	0	100	0	0
Orowaiti Bridge	350	0	0	325	0	0
Long Tunnel Road, Addison's	200	0	0	100	0	0
Stony Creek–Waimangaroa	300	0	0	200	0	0
	11,638	1	4	6,600	16	8
Inangahua County.						
Dray-road from Soldier's Creek to Devil's Creek	647	0	0	431	6	8
Dray-road from Inangahua to Rainy Creek Battery	900	10	0	606	6	8
Dray-road from Capleston up Little Boatman's Creek	379	0	0	252	13	4
Dray-road from Capleston up Main Boatman's Creek	697	0	0	464	13	4
Dray-road from Westport Road to Inangahua River	224	5	0	149	10	0
Track from Devil's Creek to Big River	134	3	6	89	9	0
Track from Waitahu River to Capleston	358	0	0	238	13	4
Survey and expenses	250	0	0	166	13	4
Track from Cariboo to Big River	728	0	0	364	0	0
Dray-road up Murray Creek to United Inglewood Claim	3,472	0	0	2,314	17	4
Road from Reefton to Big River, *viâ* Devil's Creek	614	0	0	307	0	0
Road up Big River	922	19	0	615	6	0
Continuation of dray-road up Little Boatman's Creek	169	7	6	112	18	4
Road from Capleston to Larry's Creek	640	0	0	426	13	4
Track to connect Capleston with Lone Star	75	0	0	50	0	0
Crushington to Globe Company's workings	403	0	0	201	10	0
Snowy Creek Track	85	15	0	42	17	6
Reefton to Big River	1,792	0	0	1,194	13	4
Glenroy to Horse Terrace	254	0	0	122	10	0
Devil's Creek to Globe Hill	917	6	2	458	13	1
Extension of dray-road to Boatman's *viâ* Painkiller	53	17	6	26	18	9
Mangles Valley to McGregor's Station	600	0	0	300	0	0
Globe Hill to Merrijigs	1,397	6	0	698	13	0
Larry's Creek to Lyell	1,061	15	0	530	17	6
Widening Larry's Creek Road	118	10	0	59	5	0
Road up Burke's Creek, Little Boatman's	149	0	0	74	10	0
Widening track from Scotia Tunnel, on Big River Road, to Inkermann Mine	200	0	0	80	9	0
Widening track from Fiery Cross Battery to Just-in-Time Shaft	300	0	0	150	0	0
	17,552	14	8	10,530	17	10

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LIST of WORKS on GOLDFIELDS, &c.—*continued*.

Locality and Nature of Works.	Total Cost.			Amount of Contribution paid by Mines Department.		
	£	s.	d.	£	s.	d.
Grey County.						
Road from No Town to Deep Creek	1,100	0	0	550	0	0
Road from Langdon's to Moonlight	1,600	0	0	800	0	0
Contribution from goldfields vote towards main road	2,296	6	6	2,296	6	6
Track, Waipuna to Clarke's River	1,200	0	0	800	0	0
Track, Cameron's to Cape Terrace	700	0	0	466	13	8
Road, Limestone to Maori Creek	800	0	0	533	6	0
Red Jack's to Nelson Creek	601	17	6	401	5	4
Barrytown to Deadman's	2,240	0	0	1,493	6	8
German Gully to Arnold's Flat	120	0	0	60	0	0
Baird's Terrace to Lake Brunner	400	0	0	200	0	0
Hatter's Terrace Road	1,000	0	0	500	0	0
Irishman's to Lake Brunner	2,400	0	0	1,200	0	0
Hatter's Terrace	600	0	0	400	0	0
Track, Baird's Terrace to Irishman's	250	0	0	125	0	0
Deep Creek to Bell Hill	1,331	0	0	665	10	0
Track to Blackball Diggings	790	0	0	395	0	0
Track from Ahaura, Kopara, Reese's Flat, to new rush on banks of Ahaura River	20	0	0	10	0	0
Renewal, bridge over Nelson Creek, Marsden–Dunganville Road	38	0	0	19	0	0
Repairs (corduroying), Cobden–Seven-mile Road	36	0	0	18	0	0
Repairs, Cobden–Point-Elizabeth Road	30	0	0	15	0	0
Extension Ngahere–Blackball Road to Blackball Ferry	50	0	0	25	0	0
Dray-bridge, Ten-mile Creek	688	0	0	344	0	0
Deviation, Moonlight Track	100	0	0	50	0	0
Repairs, bridges, Marsden–Dunganville Road	348	0	0	219	0	0
Seventeen-mile Bluff to Barrytown	80	0	0	40	0	0
Removing rocks, Nine- and Ten-mile Bluffs	100	0	0	50	0	0
Crœsus Battery-site, Paparoa	200	0	0	79	5	0
New River Bridge wing	100	0	0	86	0	0
River View Road	200	0	0	140	0	0
Mosquito Road	500	0	0	252	10	0
Road to Totara Flat Dredge	50	0	0	25	0	0
Maori Gully Bridge	150	0	0	75	0	0
Culverts, Nelson–Grey–Hokitika Road	300	0	0	150	0	0
	20,419	4	0	12,484	3	2
Westland County.						
Improving track, Butcher's Creek to Gentle Annie Terrace	225	10	0	163	13	4
Bridle-track to Kanieri Lake	719	11	0	359	5	6
Bridle-track to Eel Creek	168	9	0	84	4	6
Tunnel-track, Galway Beach to Gillespie's Beach	437	5	0	218	12	6
Road from Duffer's Creek, Greenstone Road, to fifteen-mile peg, Christchurch Road	726	9	0	480	4	6
Continuation of track, Back Creek to Eel Creek	249	4	0	166	8	4
Bridle-track, Duffer's Creek, Bowen and Okarito Road, to sea-beach	333	18	0	222	12	0
Ross Borough boundary to Mount Greenland	1,280	15	0	853	16	8
Track, Kanieri Lake to Humphrey's Gully	279	2	0	186	1	4
Track, Larrikin's to Loop-line Dam	449	11	0	299	14	0
Rough Wainihinihi to Upper Dam	450	0	0	300	0	0
Browning's Pass to Reefs	3,311	6	0	2,207	10	8
Okarito Forks to Teal Creek	600	0	0	400	0	0
Road, Christchurch to Baldhill Range reefs	500	0	0	250	0	0
Extension of Tucker's Flat Road to New Rush	170	19	6	85	9	9
Hokitika Borough boundary (Reefton) to Shotover Rush	120	0	0	60	0	0
Track to New Rush, Back Creek	100	0	0	50	0	0
Repairing old track round Wataroa Bluff	50	0	0	25	0	0
New Rush, south side of Hokitika River	37	18	6	18	19	3
Cedar Creek Road to Farmer's Creek	55	7	0	27	13	6
Road to gold discovery near Blue Spur	75	0	0	37	10	0
Widening Seddon's Terrace Track	150	0	0	65	10	0
Branch Road at Seddon's Terrace	38	10	6	19	5	3
Track up Middle Branch, Styx River	30	0	0	15	0	0
Improving road, Seven-mile–Taipo	150	0	0	73	3	6
Widening Shallow Rush Track	300	0	0	54	17	3
	11,008	15	6	6,724	6	10
Taieri County.						
Mullocky Gully to Silver Peak	499	15	0	333	3	4
Lake County.						
Track, Skipper's to Phœnix and Scandinavian Reefs	292	2	3	194	14	10
Track to connect scheelite-mine with Lake Wakatipu	225	0	0	150	0	0
Arrowtown to Macetown, construction	225	0	0	150	0	0
Arrowtown to Macetown, maintenance	150	0	0	100	0	0
Invincible Quartz-reef Track, Rees River	300	0	0	200	0	0
Rees Valley to company's workings	61	7	6	30	13	9
Pack-track, Criffel Diggings	50	6	6	33	11	0
Left-hand Branch Road, Skipper's	63	9	10	31	14	11
Old Morven Ferry Road	289	0	0	144	10	0
Road to workings above Cardrona	70	0	0	35	0	0
Piers, Victoria Bridge	725	0	0	362	10	0
Skipper's Road Saddle to Deep Creek	200	0	0	100	0	0
Road up Dart River	150	0	0	75	0	0
Cutting on Homeward-bound Hill	100	0	0	75	0	0
Skipper's Bridge	4,244	0	0	3,244	0	0
	7,145	6	1	4,926	14	6

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LIST of WORKS on GOLDFIELDS, &c.—*continued*.

Locality and Nature of Works.	Total Cost			Amount of Contribution paid by Mines Department.		
AIDS TO PROSPECTING—*continued*.	£	s.	d.	£	s.	d.
H. Crossan, Beaumont	28	0	0	14	0	0
Prospecting Association, Westport	39	0	0	19	10	0
Cape Colville Prospecting Syndicate	32	0	0	16	0	0
Port Charles Prospecting Association	28	0	0	14	0	0
Totara Miners' Association, Ross	24	0	0	12	0	0
Lake Mapourika Miners' Association	12	0	0	6	0	0
Lister and Robertson, Karamea	13	0	0	13	0	0
Canada Reefs Tunnel	187	10	0	93	15	0
Otago Miners' Association	600	0	0	291	8	2
Westland County (Goudie and party)	215	19	9	107	19	6
Paparata Road Board	26	0	0	13	0	0
Tauranga County (Te Puke Prospecting Association)	50	0	0	25	0	0
Havelock Miners' Association	78	0	0	39	0	0
Ohinemuri County	200	0	0	6	0	0
Mr. Olderog, Arahura	54	18	0	16	4	0
Miners' Association, Ross (J. Smith and party)	135	0	0	61	7	6
Extension of low-level tunnel, Boatman's	300	0	0	137	7	11
Prospecting-tunnel, south side Inangahua River	60	0	0	25	0	0
Prospecting Association, Mokihinui	40	0	0	15	0	0
Miners' Association, Kumara (John Kane)	9	0	0	1	2	6
Prospecting Association, Invercargill	150	0	0	68	13	6
Miners' Association, Kuaotunu	40	0	0	13	2	6
Miners' Association, Ross (Waylen and party)	50	0	0	16	13	0
Prospecting Association, Coromandel (Leahy and others)	200	0	0	100	0	0
Adit-level, Maungatawhiri Creek (G. B. Osmond)	120	0	0	68	17	0
Bay of Islands County Prospecting, Pokaka	112	13	0	112	13	0
Prospecting Russell's Outcrop	100	0	0	100	0	0
Fox's River Prospecting Association (A. T. Bate, secretary)	19	10	0	19	10	0
Buller County (Newton and party, shaft, Ballarat Terrace)	22	15	0	22	15	0
Buller County (Spence and party)	19	10	0	19	10	0
Wairau Miners' Association	50	0	0	48	4	0
Miners' Association, Nelson Creek (Thrower and Potts)	45	0	0	45	0	0
Miners' Association, Dillmanstown (Turnbull and others)	7	10	0	7	10	0
Miners' Association, Ross (Gagliardi and party)	64	18	0	64	18	0
Miners' Association, Ross (Allen and Son)	40	0	0	20	0	0
Miners' Association, Greenstone (Black and party)	27	0	0	27	0	0
Miners' Association, Cardrona	40	0	0	40	0	0
Miners' Association, Lowburn (E. Murrell)	20	0	0	13	5	0
Puhipuhi Prospecting Association	200	0	0	13	15	0
Thames County (F. and J. Wallis)	97	10	0	35	19	2
Thames County (Sheridan Company's tunnel, Tapu)	180	10	0	30	5	0
Cinnabar Mining Company, Auckland (£1 to £1 10s.)	162	16	9	108	11	2
H. H. Adam's, Waiorongomai	250	0	0	48	3	9
Miners' Association, Ross (Moye and Son)	15	10	0	6	10	6
Westland County (J. Staines)	96	0	0	4	10	0
Westland County (O'Brien and Glynn)	40	0	0	36	10	6
Upper Moutere Road Board	40	0	0	1	16	0
Buller County (Mohan and party)	220	0	0	71	8	6
Buller County (Gardiner and McKay)	56	0	0	24	0	0
Buller County (Negri and others)	43	0	0	29	1	3
Buller County (Scarlett and McHarrie)	39	0	0	18	0	0
Kumara Miners' Association (Scatterini and Anderson)	124	0	0	6	13	6
Kumara Miners' Association (Henley and party)	58	14	0	2	8	0
Kumara Miners' Association (M. Manton)	57	10	0	3	18	9
Kumara Miners' Association (Rogers and Block)	75	0	0	35	6	6
Frying-pan Tail-race	600	0	0	161	11	3
Prospecting Association, Mokihinui (French and others)	58	10	0	11	5	0
Prospecting Association, Westport	432	6	0	197	9	8
Dyer and party, Kuaotunu	120	0	0	37	16	0
Gillam's Gully Prospecting Association (Bramhall and party)	60	0	0	12	3	0
Miners' Association, Riverton	100	0	0	32	0	0
Kennedy-Waikaia Miners' Association, Invercargill	100	0	0	9	0	0
Inangahua District Miners' Association	100	0	0	25	17	6
New El Dorado Sluicing Company, Fat Boys, Criffel	300	0	0	94	4	9
Miners' Association, Greenstone (O'Donnell and party, and J. Pope)	75	0	0	30	4	3
Miners' Association, Tinkers, prospecting Matakanui	6	0	0	3	0	0
Chatterbox Tunnel (G. Clapton)	6	0	0	2	17	9
Port Charles Prospecting Association	20	0	0	11	8	0
Miners' Association, Lake Mapourika	17	4	0	7	13	3
Pitchers and Kitto, Anderson's Flat	100	0	0	20	5	11
Miners' Association, Nelson Creek (Kelly and party)	23	5	0	9	18	0
South British Prospecting Association, Lyell	135	0	0	6	15	0
Miners' Association, Ross (A. Zala)	69	0	0	69	0	0
Miners' Association, Ross (McKay and Muir)	39	0	0	39	0	0
Miners' Association, Ross (McKay and Brown)	13	0	0	13	0	0
Miners' Association, Ross (McEwen and McEchnie)	26	0	0	26	0	0
Miners' Association, Ross (C. Porter)	226	0	0	128	0	0
Miners' Association, Riverton	18	0	0	18	0	0
Katikati Prospecting Association	52	0	0	26	0	0
Cornwall, Walker, and party's tunnel, Boatman's	302	10	0	154	14	0
Miners' Association, Greenstone (Crawford and party)	109	7	6	109	7	6
Mararoa Mining Association	18	0	0	18	0	0
Hororata Prospecting Association	30	15	0	30	15	0
Paparata Road Board (Parker and Piggott)	32	10	0	32	10	0
New Bay of Islands Coal Company, prospecting Moody's outcrop	200	0	0	173	4	3
Longwood Sluicing Company	300	0	0	150	0	0
Red Jack's Miners' Association (Drummond and McDonough)	28	0	0	28	0	0
Kapanga Gold-mining Company (Limited)	20,600	0	0	1,735	3	11
Kuaotunu Prospecting Association	48	10	0	26	0	0
Te Aroha Town Board	100	0	0	37	17	6
Bombay Prospecting Association	40	0	0	16	7	9
Charleston Miners' Association	110	0	0	33	8	6
Buller County (Reaney and Rasmussen)	120	0	0	30	0	0

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LIST of WORKS on GOLDFIELDS, &c.— *continued*.

Locality and Nature of Works.	Total Cost.	Amount of Contribution paid by Mines Department.
AIDS TO PROSPECTING—*continued*.	£	£ s. d.
Buller County (Samuel and party)	100 0 0	5 11 0
Gold-mining League, Westport (McFarlane and others)	39 0 0	13 10 0
Inangahua County (Gabriel and party)	100 0 0	11 11 0
Miners' Association, Dillmanstown (Black and party)	31 10 0	12 0 0
Tapanui Prospecting Association	40 0 0	18 10 0
Miners' Association, Lowburn (Tilliman and party)	57 10 0	42 9 9
Miners' Association, Upper Waikaia	19 10 0	13 0 0
Main and party's tunnel, Kanieri	200 0 0	188 7 0
Ryan and Son's tunnel, Dillmanstown	42 0 0	21 12 0
R. A. Harcourt's tunnel, Blue Spur	180 0 0	90 0 0
Miners' Association, Ross (Archer and Horseby)	13 0 0	13 0 0
Inangahua County (R. Lees)	2 10 0	2 10 0
Westland County (Rebay and party)	112 0 0	56 0 0
Red Jack's Miners' Association (Drummond and Raynor)	24 0 0	12 0 0
Westland County (McGoveran and party)	50 0 0	37 10 0
Westland County (N. Johnson's tunnel, Fox's Flat)	140 0 0	59 0 5
Miners' Association, Ross (Gagliardi and Son)	70 0 0	17 10 0
Miners' Association, Ross (Marchesi and Scott)	200 0 0	153 15 0
Miners' Association, Greenstone (Dickson and party)	72 0 0	15 18 0
Westland County (Patrick and Moynihan)	86 0 0	45 0 0
Westland County (Ryan and Son)	120 0 0	60 0 0
Westland County, prospecting, Kanieri (£1 for £1)	1,228 15 0	614 7 6
Westland County (Dwyer and party, Blue Spur)	800 0 0	758 6 0
Miners' Association, Waiho (Batson and Snow)	9 0 0	9 0 0
Miners' Association, Nelson Creek (Coll and Moran)	160 0 0	160 0 0
Miners' Association, Nelson Creek (Hurley and party)	164 0 0	82 0 0
Miners' Association, Blackball (Keenan and Falconer)	5 17 0	5 17 0
Miners' Association, Blackball (McKenzie and O'Brien)	43 10 0	43 10 0
Miners' Association, Ross (McLeod and Dunlop)	63 14 6	40 8 6
Miners' Association, Ross (Smith and Regan)	164 2 0	164 2 0
Miners' Association, Greenstone (Candy, Roberts, and Evans)	100 0 0	60 8 6
Buller County (Jeffreys and Walker)	8 0 0	8 0 0
Buller County (Christmas and party)	4 15 0	4 15 0
Buller County (Burkitt and party)	13 0 0	13 0 0
Buller County (Stewart and party)	12 0 0	12 0 0
Buller County (Robertson and Sangwell)	26 0 0	26 0 0
Buller County (Ramsey and O'Connor)	4 15 0	4 15 0
Buller County (Clough and McGonagle)	8 0 0	8 0 0
Buller County (Negri and others)	12 0 0	12 0 0
Buller County (Quinn and party)	34 0 0	18 0 0
Buller County (Murray and Forsyth)	9 0 0	9 0 0
Buller County (Salter and party)	6 10 0	6 10 0
Inangahua County (Z. E. Curnow)	6 10 0	4 15 0
Culley and Hislop, prospecting, Kawakawa	125 0 0	125 0 0
Prospecting Association (Riverton)	25 0 0	25 0 0
Tuapeka County (Gabriel's Gully)	400 0 0	223 10 10
Nobel, Stenhouse, and Crawford's tunnel, New Chum Creek	240 0 0	240 0 0
Holmes and party's tunnel, Tucker's Flat	400 0 0	208 8 0
Deep Levels, Kumara	3,269 0 0	1,197 10 4
Miners' Association, Ross (Moye and Son)	60 0 0	14 19 6
Miners' Association, Ross (Paterson and McGowan)	26 0 0	13 0 0
Miners' Association, Waiho (Nelly and Murray)	26 0 0	12 0 0
Miners' Association, Red Jacks (Drummond and party)	50 0 0	24 0 0
Westland County (Roseveri and party)	160 0 0	80 0 0
Prospecting Mokihinui Mine (Lomas and party)	500 0 0	250 0 0
Towai-Hukerenui Coal Syndicate	200 0 0	35 2 0
Ohinemuri County (P. Prudence)	6 0 0	1 4 0
Westland County (Irwin and party)	100 0 0	35 0 0
Buller County (Brand and party)	80 0 0	74 14 3
Westland County, prospecting, Rimu (£1 for £1)	4,425 19 0	2,212 19 6
Miners' Association, Havelock (Kearns and McCusker)	100 0 0	76 0 0
Westland County (Patrick and Moynihan)	300 0 0	195 5 6
Greymouth Harbour Board (boring for coal)	500 0 0	250 0 0
Westland County (Beros and Mills)	200 0 0	155 0 0
Ohinemuri County (Scanlon and Eyre)	32 0 0	16 0 0
Ross Borough Council (Smith and party)	70 0 0	35 0 0
Contingencies	217 5 8	217 5 8
	78,638 11 10	29,780 8 6
WATER-RACES.		
Water-main, Bull's Battery	350 0 0	100 0 0
Round Hill Water-race	200 19 0	133 19 4
Tomkiss's Water-race	100 0 0	100 0 0
Cardrona Sludge-channel	100 0 0	50 0 0
New water-mains, Thames Water-race	1,479 10 4	739 15 2
Nelson Creek	957 16 9	957 16 9
Mikonui Water-race	14,279 16 4	14,279 16 4
Brown and party, Kumara	90 0 0	22 10 0
Randall Creek Water-race	222 2 3	222 2 3
Thames Water-race	1,250 0 0	1,250 0 0
Contingencies	659 12 8	659 12 8
Randall Creek Water-race	100 15 0	100 15 0
Quinn's Creek Water-race	70 0 0	70 0 0
Survey, water-race, Ninety-mile Beach	65 6 7	65 6 7
Improving water-supply, Oamaru	1,250 0 0	1,150 7 2
Roaring Meg Water-race (Jones, Baxter, and party)	1,600 0 0	800 0 0
Sulky Gully Water-race	504 0 0	218 0 0
Gentle Annie Creek, Mata (R. Kelly)	200 0 0	40 0 0
Purchase Byrne, O'Hallahan, and Murdoch's water rights	35 0 0	35 0 0
Argyle Water-race	8,453 15 1	8,453 15 1
Bell Hill Sluicing Company	1,000 0 0	500 0 0
Finlay and McLiver's Water-race, at Measletown	400 0 0	34 5 4
	33,368 14 0	29,988 1 8

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List of Works on Goldfields, &c.—continued.

Locality and Nature of Works	Total Cost			Amount of Contribution paid by Mines Department		
	£	s.	d.	£	s.	d.
Drainage and Tailing-channels						
Drainage-channel, Lawrence (total cost approximate)	[illegible]	[illegible]	[illegible]	2,000	0	0
Subsidy towards purchase of Messrs Landman and Crawford's freehold in Spring Creek, to allow tailings to be deposited (Tinker's Diggings	500	0	0	500	0	0
Drainage by flood, Thames	[illegible]	[illegible]	[illegible]	500	0	0
Sludge-channel, Hunter's Gully, Bannockburn	[illegible]	[illegible]	[illegible]	251	1	0
Round Hill Sludge-channel survey	[illegible]	[illegible]	[illegible]	52	19	7
Compensation to J. Costello, damage done by tailings	[illegible]	[illegible]	[illegible]	788	0	0
Long Gully Sludge-channel	[illegible]	[illegible]	[illegible]	100	0	0
New Pipestay Gully Sludge-channel	[illegible]	[illegible]	[illegible]	773	19	0
Kumara Sludge-channel, No. 2	[illegible]	[illegible]	[illegible]	2,762	17	2
Ophir Tail-race	[illegible]	[illegible]	[illegible]	1,150	0	0
Lawrence Drainage-channel	[illegible]	[illegible]	[illegible]	1,242	9	0
Tailings outlet, Macrae's Flat	[illegible]	[illegible]	[illegible]	1,536	4	0
Ross Sludge and Storm-water Channel	[illegible]	[illegible]	[illegible]	1,675	10	6
Kuaotunu Sludge-channel £2 for £1	[illegible]	[illegible]	[illegible]	200	0	0
Branch tail-race to No. 6 Channel	[illegible]	[illegible]	[illegible]	100	0	0
Rimu Drainage-channel	[illegible]	[illegible]	[illegible]	191	19	6
Kumara Sludge-channel, No. 5	[illegible]	[illegible]	[illegible]	5,255	4	9
Kumara Sludge-channel, No. 4	[illegible]	[illegible]	[illegible]	1,151	10	8
Kumara Sludge-channel, No. 3	[illegible]	[illegible]	[illegible]	58	0	0
Donnelly's Creek Tail-race	[illegible]	[illegible]	[illegible]	444	4	5
Muddy Creek Channel	[illegible]	[illegible]	[illegible]	1,000	0	0
Drain, Te Aroha West	[illegible]	[illegible]	[illegible]	61	0	0
	[illegible]	[illegible]	[illegible]	21,603	19	7
Aid towards the Treatment of Ores						
Testing-plant, School of Mines, Thames	[illegible]	[illegible]	[illegible]	600	0	0
Testing minerals, Dunedin Exhibition	[illegible]	[illegible]	[illegible]	142	8	9
Testing-battery, Mercury Bay	[illegible]	[illegible]	[illegible]	915	1	4
Public crushing-plant (Coromandel Board of Mines	[illegible]	[illegible]	[illegible]	856	10	5
	3,164	0	6	2,514	0	6
Aid towards Construction of Telephone-lines						
Bannockburn to Nevis	[illegible]	[illegible]	[illegible]	50	0	0
Works which were constructed by Mines Department.						
Construction of road, Arrowtown to Macetown	9,270	6	8	9,270	6	8
Road to open up Woodstock Goldfield	1,000	0	0	1,000	0	0
Ahaura to Amuri	2,504	19	7	2,504	19	7
Waikaia Bush Road	1,000	0	0	1,000	0	0
Waitahuna Bridge	750	0	0	750	0	0
Merrivale Races	500	0	0	500	0	0
Mokihinui to Specimen Creek	1,238	7	5	1,238	7	5
Willsetown Quarry and Road	1,830	17	7	1,830	17	7
Opening Kowai River	552	8	0	552	8	0
Level to Macrae's	5,098	8	6	5,098	8	6
Brighton to Seventeen-mile Beach	1,789	7	2	1,789	7	2
Wanganui to Karamea	2,000	0	0	2,000	0	0
Hassett's Terrace to Bell Hill	500	0	0	500	0	0
Cedar Creek Road	3,000	0	0	3,000	0	0
Ocean Tramway Road	2,208	9	2	2,208	9	2
Cowden to Seventeen-mile Beach	3,036	1	4	3,036	1	4
Cedar Creek Road	1,500	0	0	1,500	0	0
Bridle-track to Upper Anatoki	722	8	0	722	8	0
Whangamata Road	141	10	6	141	10	6
Karangahake through Gorge	1,000	0	0	1,000	0	0
Arthur's Point to Skipper's	12,167	4	1	12,167	4	1
Tracks to Coal Island	54	6	3	54	6	3
Grey Valley to Teremakau	900	0	0	900	0	0
Rimu to New Rush	829	17	9	829	17	9
Tapu to Waikawau	750	10	0	750	10	0
Puhipuhi Road	1,396	17	9	1,396	17	9
Jackson's Bay to Cascade and Gorge River district	5,310	10	11	5,310	10	11
Improving roads and tracks, Collingwood to Takaka and Motueka	10,905	8	11	10,905	8	11
Tramway from New Find to Waitekauri	100	0	0	100	0	0
Havelock–Mahakipawa Dray-road	1,311	9	0	1,311	9	0
Mokihinui to Wanganui	200	0	0	200	0	0
Burnett's Face to Coalbrookdale	200	0	0	200	0	0
Deadman's to Christmas Terrace	20	0	0	20	0	0
Low-level Alpine Claim, Lyell	80	0	0	80	0	0
Bowen Road to Salt-water Beach	60	0	0	60	0	0
Repairing damage done by floods, Westland County	100	0	0	100	0	0
Deviation of road at Kanieri Forks	140	0	0	140	0	0
Road up Dart River	200	0	0	200	0	0
Kuaotunu to Mercury Bay	350	0	0	350	0	0
Thames to Manaia	500	0	0	500	0	0
Cobden to Seventeen-mile Beach	400	0	0	400	0	0
Bridge over Mahinapua Creek	503	16	10	503	16	10
Track up Waiho River	105	0	0	105	0	0
Haast Ferry to Glue-pot	126	0	0	126	0	0
Paeroa–Waihi Road	114	0	0	114	0	0
Waitekauri to New Find	250	0	0	250	0	0

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List of Works on Goldfields, &c.—*continued.*

Locality and Nature of Works.	Total Cost.			Amount of Contribution paid by Mines Department.		
Works wholly constructed by Mines Department—*continued.*	£	s.	d.	£	s.	d.
Mahakipawa to Waikakaho	183	12	1	183	12	1
Oparara through gorge to gold-workings	150	0	0	150	0	0
Okira Bridge, at Dirty Mary's Creek	100	0	0	100	0	0
Lagoon Bridge	100	0	0	100	0	0
Widening Cape Terrace Road	100	0	0	100	0	0
Deviation, Granville Road	70	0	0	70	0	0
Tucker's Flat Road	247	18	7	247	18	7
Dillman's-Larrikin's Road	125	15	0	125	15	0
Track at Kanieri Lake and McIntosh Falls, Lake Mahinapua	195	4	6	195	4	6
Extension of road, Rimu to Shallow Rush	150	0	0	150	0	0
Gillam's Gully Track	149	16	0	149	16	0
McKay's Creek, Kokatahi Track	100	0	0	100	0	0
Aorere Valley to Karamea and Mokihinui	29,938	1	2	29,938	1	2
Arrowtown to Macetown	450	0	0	450	0	0
Nelson Creek Bridge	100	0	0	100	0	0
Cascade to Barn Bay Road	411	7	0	411	7	0
Repairs to decking, Tapu Wharf	100	0	0	100	0	0
Waitekauri Battery from Junction-Waihi Road	150	0	0	150	0	0
Deep Creek, Wakamarina, to Empire City Company's claim	50	0	0	50	0	0
Track to diggings at Cape Foulwind	497	11	0	497	11	0
Bridge over Fox's River at Brighton	100	0	0	100	0	0
Totara Bridge	255	0	0	255	0	0
Road from Mokihinui Bridge to gold-workings	75	0	0	75	0	0
Clearing two miles of old track from right-hand branch of Kanieri River to Gentle Annie Terrace	13	0	0	13	0	0
Extending horse-track to Blackball Creek	500	0	0	500	0	0
Matawai to Kaimarama	150	0	0	150	0	0
Tiki to Mahakirau	250	0	0	250	0	0
Karangahake Gorge to Waihi	350	0	0	350	0	0
Upper Tararu Road	471	10	3	471	10	3
Red Hill Road	249	8	1	249	8	1
Repairs, Nile Bridge	1,131	2	6	1,131	2	6
Miller's Flat to Skipper's	580	0	0	580	0	0
Cobden to Coal Creek	375	0	0	375	0	0
Track to New Find, Tairua	47	11	6	47	11	6
Cedar Creek Dray-road	466	11	2	466	11	2
Road to Matarangi Goldfield	75	0	0	75	0	0
Repairs, Manaia Track	90	0	0	90	0	0
Upper Township School Bridge	50	0	0	50	0	0
Tiki Bridge across Waiau	256	0	0	256	0	0
Scott's Bridge	175	0	0	175	0	0
Oteau Bridge	150	0	0	150	0	0
Mercury Bay-Kaimarama Road	50	0	0	50	0	0
Stoney Creek Track	15	0	0	15	0	0
Road to mines, Waiomo	50	0	0	50	0	0
Upper Hill Track to branch track, Waiorongomai	30	0	0	30	0	0
Canadian Gully Bridge, and repairs to tunnel on horse-grade, Waiorongomai	70	0	0	70	0	0
Waiorongomai Road	100	0	0	100	0	0
Track from Slate River to Rocky	225	0	0	225	0	0
Pack-track to Killdevil	100	0	0	100	0	0
Repairs, Wangapeka Road towards Crow Diggings	153	0	7	153	0	7
Repairing flood-damages, Grey County	370	0	0	370	0	0
Taipo Track to Seven-mile	194	5	8	194	5	8
Repairs, Totara Bridge	336	0	0	336	0	0
Repairs, Kanieri Lake Road	80	0	0	80	0	0
Mercury Bay to Whenuakite and Boat Harbour	150	0	0	150	0	0
Tiki to Gumtown, *viâ* Kaimarama	160	0	0	160	0	0
Driving Creek to Cabbage Bay, and Driving Creek to Cape Colville	660	0	0	660	0	0
Tiki to Waikawau	600	0	0	600	0	0
Paeroa to Te Aroha	365	0	0	365	0	0
Puriri to east side of range	596	19	6	596	19	6
Onamalutu to Wakamarina Forks	400	0	0	400	0	0
Waimangaroa to Denniston	100	0	0	100	0	0
Road to Lyell's Creek Extended Company's tunnel	200	0	0	200	0	0
Jackson's Bay to Cascade	1,110	8	1	1,110	8	1
Bridge over Ogilvie's Creek	150	0	0	150	0	0
Gillam's Gully Track	220	0	0	220	0	0
Bridge over Kanieri River at Kokatahi	467	10	10	467	10	10
Road to Oparara Diggings	100	0	0	100	0	0
Millerton Road	249	0	3	249	0	3
Waiau to Preservation Inlet	7,961	19	6	7,961	19	6
Hatter's Terrace to Haupiri	1,650	0	0	1,650	0	0
Grey River to Moonlight	530	0	0	530	0	0
Blackball Track	1,185	12	5	1,185	12	5
Ahaura-Kopara Road	400	0	0	400	0	0
Mackley's to Waipuna Terrace	100	0	0	100	0	0
Footbridge over Blackball Creek	150	0	0	150	0	0
Waipapa to Waikawa	200	0	0	200	0	0
Waipapa to Six-mile	100	0	0	100	0	0
Drain at Adamson's	50	0	0	50	0	0
Maruia Track, between Reefton and Maruia	50	0	0	50	0	0
Sledge-track to Langdon Reefs	30	0	0	30	0	0
Track to Blackball Township, repairs	40	0	0	40	0	0
Track, Old Man Range	50	0	0	50	0	0
Road to gold discovery near Blue Spur	45	0	0	45	0	0

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LIST of WORKS on GOLDFIELDS, &c.—*continued*.

Locality and Nature of Works.	Total Cost.			Amount of Contribution paid by Mines Department.		
WORKS WHOLLY CONSTRUCTED BY MINES DEPARTMENT—*continued*.	£	s.	d.	£	s.	d.
Bartlett's Creek Track	200	0	0	200	0	0
Prospecting-track, Brunnerton to Paparoa	125	0	0	125	0	0
Extension Seddon's Terrace Track to new claim	208	10	6	208	10	6
West Tokatea Road	50	0	0	50	0	0
Waitaia Battery Road	150	0	0	150	0	0
Preece's Point Road	150	0	0	150	0	0
Tokatea–Kennedy Bay Road	100	0	0	100	0	0
Main Cabbage Bay Road	50	0	0	50	0	0
Hooker's to Mercury Bay	100	0	0	100	0	0
Opeto Road	100	0	0	100	0	0
Blagrove's Road	400	0	0	400	0	0
Cemetery–Cabbage Bay Road	100	0	0	100	0	0
Rails for Coromandel Wharf	31	5	0	31	5	0
Culverts, Tiki Road	100	0	0	100	0	0
Soldier's Creek Road	198	5	0	198	5	0
Road to Barrytown	300	0	0	300	0	0
Tracks to western sounds	7,307	17	11	7,307	17	11
Road to R. Kelly's claim, Gentle Annie Creek	100	0	0	100	0	0
Waitekauri to New Find	250	0	0	250	0	0
Paeroa Mill Road	50	0	0	50	0	0
Owharoa to Waitawheta	50	0	0	50	0	0
Deviation Road, Earl's Hill	200	0	0	200	0	0
Waihi to Katikati	75	0	0	75	0	0
Bridge over Slate River	50	0	0	50	0	0
Pack-track to Glover's Flat, Lower Anatoki	50	0	0	50	0	0
Clearing Karaka Creek of flood-damage	50	0	0	50	0	0
Track up right-hand branch of Cullen's Creek	25	0	0	25	0	0
Footbridge, Waimangaroa River	50	0	0	50	0	0
Track up Callary Branch, Waiho River	70	0	0	70	0	0
Converting Wilson's Lead Track, Addison's, into a dray-road	400	0	0	400	0	0
Cabbage Bay to mines	400	0	0	400	0	0
Coromandel to Kuaotunu	2,070	0	0	2,070	0	0
Manaia to mines	100	0	0	100	0	0
Whitianga to Mahakirau	300	0	0	300	0	0
Whangapoua Mill Road	100	0	0	100	0	0
Kuaotunu Bridge	200	0	0	200	0	0
Granity Creek to Ngakawau	100	0	0	100	0	0
Crow Diggings Track	527	8	2	527	8	2
Road to diggings, Cape Foulwind	100	0	0	100	0	0
Ngahere to Blackball	600	0	0	600	0	0
Fencing land, Blackball Road	110	0	0	110	0	0
Prospecting-track, Greek's Gully to Kanieri Forks	150	0	0	150	0	0
Repairing Jones's Creek and Donohue's Storm-channels	100	0	0	100	0	0
Deviation, Pleasant Creek Track	130	0	0	130	0	0
Road-works at Ohaeawai	500	0	0	500	0	0
Mahakirau Creek Road	200	0	0	200	0	0
Puriri to mines	100	0	0	100	0	0
Katikati–Waihi Road	150	0	0	150	0	0
Pack-track from Kerikeri	50	0	0	50	0	0
Track to Waitakohe Goldfield	50	0	0	50	0	0
Repairing bridges to mines, Te Puke	250	0	0	250	0	0
Helena Bay to Whakapara Railway-station	100	0	0	100	0	0
Gordon Settlement to Waharoa	600	0	0	600	0	0
Waiorongomai Road	300	0	0	300	0	0
Approach to railway-bridge, Te Aroha	150	0	0	150	0	0
Upper Waitekauri Bridge	250	0	0	250	0	0
Junction Waihi Road to New Find, Waitekauri	328	8	0	328	8	0
Repairing bridges, Doctor's and Staunton's Creeks	200	0	0	200	0	0
Four-mile Bridge	100	0	0	100	0	0
Fox's Bridge	100	0	0	100	0	0
Charleston–Nine-mile Beach	200	0	0	200	0	0
Road, Promised Land–Karamea	550	0	0	550	0	0
Karamea Bridge and approaches	3,565	19	8	3,565	19	8
Approaches, Matakitaki Bridge	279	15	0	279	15	0
Snowy Creek Bridge	300	0	0	300	0	0
Big River Road	4,571	0	0	4,571	0	0
Footbridge across by-wash, Ngahere–Blackball Ferry	210	0	0	210	0	0
Track to Healey's Gully	90	0	0	90	0	0
Track, Lancashire Flat to head of Clearwater Creek	50	0	0	50	0	0
Granville Road	100	0	0	100	0	0
Footbridges, Blackwater and Greenstone	300	0	0	300	0	0
Brown's Terrace to Arnold	200	0	0	200	0	0
Protective works, main Grey Bridge	191	0	0	191	0	0
Extension, Tucker's Flat Road	103	2	6	103	2	6
Butcher's Creek Bridge, Kanieri Lake Road	129	17	6	129	17	6
Kapitea Creek Bridge, Lamplough Track	118	0	0	118	0	0
Widening Milltown Track to Humphrey's Gully	600	0	0	600	0	0
Pack-track, Seddon's Terrace to Eel Creek	246	17	6	246	17	6
New bridge, Kapitea Creek, Loop-line Road	30	8	7	30	8	7
Stribbing's Creek Bridge	70	8	11	70	8	11
Widening Seddon's Terrace Road extension	199	0	0	199	0	0
Compensation, Larrikin's Road	56	0	0	56	0	0
Garston to Nevis	1,965	17	2	1,965	17	2
Nevis Valley Road	400	0	0	400	0	0

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List of Works on Goldfields, &c.—*continued.*

Locality and Nature of Works.	Total Cost.	Amount of Contribution paid by Mines Department.
Works wholly constructed by Mines Department—*continued.*	£ s. d.	£ s. d.
Okarito River Bridge	300 0 0	300 0 0
Drainage, Stafford Township	399 17 5	399 17 5
Wangapeka Track, Rolling River–Kiwi Creek	149 19 10	149 19 10
Tracks, Stewart Island	718 7 8	718 7 8
Widening Lake Mapourika–Waiho Road	782 6 8	782 6 8
Roads, Great Barrier	604 4 2	604 4 2
Riversdale–Waikaia	200 0 0	200 0 0
Prospecting-track, Lyell–Larry's	100 0 0	100 0 0
Track to New Find, Victoria Range	500 0 0	500 0 0
Extending road into bush, Addison's	100 0 0	100 0 0
Clearing rocks and easing curves, Nine- and Ten-mile Bluffs	129 6 11	129 6 11
Repairs flood-damages, South Westland	100 0 0	100 0 0
Hungerford's Bridge	444 11 5	444 11 5
Waitangi Bluff Track	99 18 9	99 18 9
Track from Cedar Creek Road to Ford and Thompson's claim	20 0 0	20 0 0
Repairs Mount Greenland Track	50 0 0	50 0 0
Ross Road, towards Ranges	199 12 6	199 12 6
Repairs pack-track, Cedar Creek	100 0 0	100 0 0
Kinsella's land, taken for Blackball Road	5 11 0	5 11 0
Maratoto to mines	149 5 6	149 5 6
Hatter's Terrace–Haupiri	200 0 0	200 0 0
Upper Waiotahi Road	492 10 0	492 10 0
Inland from Omahu	400 0 0	400 0 0
Gannon's to Painkiller	196 10 6	196 10 6
Netherton Road	28 14 6	28 14 6
Repairs, Tapu Creek Road	66 0 0	66 0 0
Repairs, Karaka Creek Road	40 0 0	40 0 0
Gravelling road through Mr. Adams's property	100 0 0	100 0 0
Gravelling Onamalutu Track	100 0 0	100 0 0
Road to Fenian Creek, Karamea	250 0 0	250 0 0
Westport and Mokihinui Railway-line to Jones's Creek	100 0 0	100 0 0
Footbridge, No Town Creek	50 0 0	50 0 0
Wood's Creek Bridge	80 0 0	80 0 0
Maori Creek Bridge	50 0 0	50 0 0
Main South Road to Mikonui Beach	15 15 0	15 15 0
River-protection works, Te Aroha	200 0 0	200 0 0
Drains, Maratoto	100 0 0	100 0 0
Repairs, Mata Bridge	300 0 0	300 0 6
Roads, Tauranga County	1,226 17 5	1,226 17 0
Re-metalling Wakamarina Road	500 0 0	500 0 5
Pakawau Bush Road	425 0 0	425 0 0
Scott's Creek Bridge	170 0 0	170 0 0
Richmond–Collingwood	250 0 0	250 0 0
Deadman's Creek–Christmas Terrace	250 0 0	250 0 0
Denniston–Cascade Creek	100 0 0	100 0 0
Big Totara River Bridge	450 0 0	450 0 0
Little Totara River Bridge	350 0 0	350 0 0
Twins Road	100 0 0	100 0 0
Track up Four-mile and Nile Rivers	250 0 0	250 0 0
Culverts, Devil's Creek	100 0 0	100 0 0
Moonlight–Paparoa	100 0 0	100 0 0
Footbridges, Cobden–Seven-mile Road	342 10 0	342 10 0
Grey River–Moonlight	500 0 0	500 0 0
Bridge, Brandy Jack's Creek	150 0 0	150 0 0
Track up Ten-mile Creek	100 0 0	100 0 0
Road, Cobden to Warren's and Ten-mile Bluff to Barrytown	500 0 0	500 0 0
Cape Terrace Road continuation	150 0 0	150 0 0
Lake Brunner Road to Maori Creek	150 0 0	150 0 0
Hampden to Horse Terrace	3,450 18 6	3,450 18 0
Track to Adamstown	375 4 0	375 4 6
Brunnerton–Paparoa	50 0 0	50 0 0
Waikupakupa Ocean Beach to Main Road	100 8 0	100 8 0
Totara River to Farmer's Creek	194 13 0	194 13 0
Doughboy Road	300 0 0	300 0 0
Widening and repairing Lamplough Track	145 15 0	145 15 0
Extension, Gillam's Gully Track	100 0 0	100 0 0
Adair's Track, Mahinapua Road	150 0 0	150 0 0
Mahinapua and South Terrace Track	250 0 0	250 0 0
Veronica Creek Track	200 0 0	200 0 0
Waipori–Berwick Road	1,976 18 9	1,976 18 0
Roxburgh–Clyde	500 0 0	500 0 9
Orepuki–Block I., Longwood	500 0 0	500 0 0
Tableland horse-track	199 9 3	199 9 0
Landing Creek Bridge	289 16 6	289 16 3
Walker's Creek Bridge	214 12 2	214 12 6
Greenstone–Teremakau	240 0 3	240 0 2
Bell Hill Road	199 9 4	199 9 3
Bridge over Kanieri River	94 5 0	94 5 4
Main South Road to Mikonui Beach	84 15 0	84 15 0
Deviation, Larrikin's Road	1,375 4 2	1,375 4 0
Pine-tree Road	45 10 7	45 10 2
Wire Bridge, German Gully Track	89 19 6	89 19 7
Road-formation, Waitekauri to Cross Road	271 11 11	271 11 11
Bridge, Mariposa Battery Road	24 0 0	24 0 0

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List of Works on Goldfields, &c.—*continued.*

Locality and Nature of Works.	Total Cost.			Amount of Contribution paid by Mines Department.		
Works wholly constructed by Mines Department—*continued.*	£	s.	d.	£	s.	d
Crosbie Settlement Road	50	0	0	50	0	0
Waitaia Battery-site to Low Level	50	0	0	50	0	0
Repairs, Tauranga-Te Puke	25	2	6	25	2	6
Rockville–Slate River	51	0	0	51	0	0
Aorere Main Road, gravelling	60	0	0	60	0	0
Ferntown footbridges and gravelling	48	0	0	48	0	0
Swamp Road, Ferntown	30	0	0	30	0	0
Clearing slips, Seventeen-mile Bluff	150	0	0	150	0	0
Clearing slips, Nelson–Grey–Ross Road	115	0	0	115	0	0
Bridges over Raleigh Creek (3)	324	10	0	324	10	0
Hampden Cemetery to School-house, Murchison	345	1	6	345	1	6
Squaretown Bridge over Little Grey River	75	0	0	75	0	0
Berwick–Waipori, repairs	75	0	0	75	0	0
Beaumont–Miller's Flat	250	0	0	250	0	0
Track to Police Station, Seddonville	37	19	2	37	19	2
Improving track, Sealer's Creek	49	12	8	49	12	8
Kiripaka to Coal-mines	80	0	0	80	0	0
Waiorongomai Road	150	0	0	150	0	0
Tiki–Opitonui	250	0	0	250	0	0
Taumatawahine Bridge	300	0	0	300	0	0
Cemetery Road, Kuaotunu	100	0	0	100	0	0
Tiki–Matawai	45	0	0	45	0	0
Puriri–Tairua	1,135	14	6	1,135	14	6
Beach Road, Thames	100	0	0	100	0	0
Puru Creek Road	400	0	0	400	0	0
Tararu Creek Bridge	100	0	0	100	0	0
Turua–Netherton	200	0	0	200	0	0
Te Aroha Bridge	250	0	0	250	0	0
Bartlett's Creek Road	449	4	7	449	4	7
Mount Patriarch Road	200	0	0	200	0	0
Takaka River Footbridge	250	0	0	250	0	0
Karamea Track	250	0	0	250	0	0
Bainham–Upper Aorere	200	0	0	200	0	0
Shaggery Road	100	0	0	100	0	0
Seddonville–Mokihinui	920	0	0	920	0	0
Mokihinui to Reefs, widening	500	0	0	500	0	0
Mokihinui to Wanganui, improving	600	0	0	600	0	0
Lyell–Victoria Range	450	0	0	450	0	0
Nile Saddle–Maori Creek	150	0	0	150	0	0
Seddonville–Cardiff	100	0	0	100	0	0
Painkiller–Murray Creek	844	7	6	844	7	6
Little Grey River Bridge	400	0	0	400	0	0
Improving crossings, Waitahu River and Road, up Kirwan's Creek	450	0	0	450	0	0
Fagan's Creek, Barrytown, to Paparoa	425	0	0	425	0	0
Nelson Creek Bridge	950	0	0	950	0	0
Callaghan's Creek Bridge	250	0	0	250	0	0
Mosquito–Maori Creek	100	0	0	100	0	0
Deviation, Westbrook–Teremakau	450	0	0	450	0	0
Bridge, Cobden–Brunner Road	125	10	0	125	10	0
Moonlight Track, deviation	140	0	0	140	0	0
Totara River to Constitution Hill	123	1	0	123	1	0
Teremakau–Paroa	250	0	0	250	0	0
Back Creek Road, deviation	200	0	0	200	0	0
Blue Spur Creek Bridge	29	8	0	29	8	0
Young Hill Creek Road	150	0	0	150	0	0
Repairs to road between Sections 17 and 45, Waikaka	100	0	0	100	0	0
Skippers–Bullendale	200	0	0	200	0	0
Wangapeka–Wanganui	2,324	17	2	2,324	17	2
Okuru River Ford Track	342	18	8	342	18	8
Gillespie's Bluff Track	151	14	1	151	14	1
Maori River Road	149	19	6	149	19	6
Clifden Bridge, Waiau	1,115	3	0	1,115	3	0
Whangamata Harbour to Wentworth	100	0	0	100	0	0
Waiorongomai–Gordon	150	0	0	150	0	0
Easing grade Kahika Hill	75	0	0	75	0	0
Bartlett's Creek–Cat Point	200	0	0	200	0	0
Bridges, Dead Horse and Walker's Creeks	25	0	0	25	0	0
Black Creek Bridge	75	0	0	75	0	0
Wharton's Dam to Deep Creek	25	0	0	25	0	0
Piano Flat Company's Track	50	0	0	50	0	0
Waikaia–Whitecomb (repairs)	50	0	0	50	0	0
Mangles Bridge	4,323	4	8	4,323	4	8
Karangarua Bridge	448	13	6	448	13	6
Repairs Donnelly's Creek Bridge	440	1	3	440	1	3
Waiau Bridge to Old Mill-site	150	0	0	150	0	0
Donnelly's Bridge	136	10	0	136	10	0
Sullivan's Creek Bridge	164	0	0	164	0	0
Rings Road Bridge	325	0	0	325	0	0
Railway-stations Roads	500	0	0	500	0	0
Matatoke Outfall-drain	100	0	0	100	0	0
Komata Reefs–Paeroa	500	0	0	500	0	0
Grace Darling Road	392	0	0	392	0	0

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List of Works on Goldfields, &c.—*continued.*

Locality and Nature of Works.	Total Cost.			Amount of Contribution paid by Mines Department.		
Works wholly constructed by Mines Department—*continued.*	£	s.	d.	£	s.	d.
Komata Creek Road	150	0	0	150	0	0
Waitekauri Creek Bridge	160	0	0	160	0	0
Papamoa–Te Puke	275	0	0	275	0	0
Tauranga–Te Puke	400	0	0	400	0	0
Slate River Road	100	0	0	100	0	0
Motupipi Bridge	100	0	0	100	0	0
Tracks, Wakamarina and Mahakipawa	46	16	6	46	16	6
Promised Land–Ohinemuri Creek	400	0	0	400	0	0
Fairdown to Beach	100	0	0	100	0	0
Paparoa River Track	100	0	0	100	0	0
Capleston–Larry's	415	0	0	415	0	0
Blackball–Paparoa	1,686	10	0	1,686	10	0
Coal Creek Bridge	538	0	0	538	0	0
Totara Flat Road	100	0	0	100	0	0
Dowling Creek Bridge	175	0	0	175	0	0
Granite Creek Bridge	100	0	0	100	0	0
Blackball Road (improvements)	100	0	0	100	0	0
Sunny Bight Track (widening)	200	0	0	200	0	0
Callery Track and Wire Bridge	400	0	0	400	0	0
Mikonui River approaches	100	0	0	100	0	0
McKay's Creek Bridge	270	12	0	270	12	0
Haast–Blue River Road	100	0	0	100	0	0
Arawata Track	100	0	0	100	0	0
Turnbull and Okuru Rivers Track	100	0	0	100	0	0
Waitahuna–Bruce County boundary	300	0	0	300	0	0
Clyde–Ophir	200	0	0	200	0	0
Nokomai Road	250	0	0	250	0	0
Skipper's–Gallant Tip	100	0	0	100	0	0
Beale's Hill Road deviation	100	0	0	100	0	0
Gore–Waikaka	400	0	0	400	0	0
Riversdale–Waikaia	200	0	0	200	0	0
Charlton Road	200	0	0	200	0	0
Orepuki–Shale-works	200	0	0	200	0	0
Havelock–Mahakipawa	191	5	1	191	5	1
Dee Creek Bridge	538	3	10	538	3	10
Cook's River Flat (widening)	396	13	6	396	13	6
Galway–Bluff Track	147	15	10	147	15	10
Kokotahi Road	451	2	5	451	2	5
Donoghue's deviation	229	18	6	229	18	6
Orepuki–Preservation Inlet	3,888	9	4	3,888	9	4
Mason's Bay Track	150	9	6	150	9	6
Granity Creek Bridge	431	12	0	431	12	0
Mount Hercules deviation (Great South Road)	1,119	4	6	1,119	4	6
Bridles Point–Deedwater	250	0	0	250	0	0
Waitaia Mine to battery	100	0	0	100	0	0
Gumtown Landing to post-office	50	0	0	50	0	0
Repairs, track, Thames Road to McLaughlin's	50	0	0	50	0	0
Maratoto Road	199	13	10	199	13	10
Thames River–Whangamata	200	0	0	200	0	0
Cullensville–Waikakaho	55	0	0	55	0	0
Road to Golden Bar Mine	83	3	6	83	3	6
Tuamarina–Kaituna	184	0	0	184	0	0
Neudorf–Ngatimoti	100	0	0	100	0	0
Graham River Bridge	150	0	0	150	0	0
Takaka Bridge protective works	150	0	0	150	0	0
Takaka Hill Road	150	0	0	150	0	0
Cobden–Barrytown (repairs)	1,572	0	0	1,572	0	0
Brown's Terrace–Kotuku	100	0	0	100	0	0
Blackball footbridge approaches	250	0	0	250	0	0
Twelve-mile Bluff–Fourteen-mile Bluff	100	0	0	100	0	0
Cobden–Point Elizabeth	100	0	0	100	0	0
Nelson Creek–Bell Hill	250	0	0	250	0	0
Big River–Slatey Creek	100	0	0	100	0	0
Big River–St. George	249	14	0	249	14	0
Kanieri River Bridge	80	15	0	80	15	0
Arrow–Matatapu	100	0	0	100	0	0
Bridles Point–Deepwater	100	0	0	100	0	0
Blind Bay–Whangaparapara	844	1	5	844	1	5
Karaka Creek Road	100	0	0	100	0	0
Lower Tairua–Broken Hill	150	0	0	150	0	0
Waitekauri–Wharekiraupunga	98	8	6	98	8	6
Mill Road	200	0	0	200	0	0
Waitekauri–Hill Track	100	0	0	100	0	0
Repairs, Kaituna Bridge	81	3	6	81	3	6
Lloyd's Valley Road bridges	150	0	0	150	0	0
Glenrae–Tadmor	100	0	0	100	0	0
Brooklyn Valley Road	100	0	0	100	0	0
Shaggery Road	100	0	0	100	0	0
Oparara River Road, Karamea	550	0	0	550	0	0
Bradshaw's Lead Road	200	0	0	200	0	0
Fenian Creek Track	250	0	0	250	0	0
Karamea River Protective Works	200	0	0	200	0	0
Coalbrookdale–Cedar Creek	200	0	0	200	0	0

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List of Works on Goldfields, &c.—*continued.*

Locality and Nature of Works.	Total Cost.	Amount of Contribution paid by Mines Department.
Roads to open up Mines other than Gold.	£ s. d.	£ s. d.
Aniseed Valley to Champion Copper-mine	4,963 10 6	4,116 10 6
Richmond Hill to copper-mine	315 16 0	209 4 0
Track, Ohinemuri Coal-seam	267 3 4	133 11 8
Road, Kanieri Coalfield	600 0 0	300 0 0
	6,146 9 10	4,759 6 2
Tracks to open up Mineral Lands.		
Glory Harbour to Kopack	50 0 0	50 0 0
Port Pegasus Track	155 7 6	155 7 6
Removing snags and felling timber, Mokau River	40 0 0	40 0 0
Ngakawau Footbridge	80 0 7	80 0 7
	325 8 1	325 8 1
Repairing Flood-damages.		
Thames Borough	500 0 0	500 0 0
Artesian-well Boring.		
Maniototo Plains	800 0 0	800 0 0
Prospecting Deep Levels.		
Thames-Hauraki Goldfields (Limited), Queen of Beauty shaft	50,500 0 0	25,000 0 0
Thames-Hauraki Goldfields (Limited), Queen of Beauty shaft, Inspector's fee	500 0 0	500 0 0
	51,000 0 0	25,500 0 0
Resumption of Land for Mining.		
Resumption of J. Holmes's land at Kumara for a tailings-site	300 0 0	300 0 0
Resumption of O'Neil and McCormack's land at Back Creek	562 7 0	562 7 0
Purchase Cassrell and Bennett's leaseholds, Paeroa Township	2,250 0 0	2,250 0 0
	3,112 7 0	3,112 7 0

Summary of Works.

	£ s. d.	£ s. d.
Roads (subsidised)—		
Bay of Islands County	2,092 0 0	1,351 0 0
Coromandel County	19,286 3 9	11,455 15 10
Te Aroha Town Board	334 0 0	167 0 0
Thames County	13,854 15 11	7,834 6 11
Thames Borough	3,611 19 2	2,359 5 0
Ohinemuri County	8,757 17 9	4,937 8 5
Waitoa Road Board	200 0 0	130 0 0
Piako County	22,348 2 3	14,616 6 10
Katikati Road Board	507 19 6	253 18 9
Hutt County	959 16 6	435 17 0
Marlborough County	1,715 4 0	933 18 8
Waimea County	1,459 8 8	729 14 4
Collingwood County	3,681 1 8	2,140 9 9
Buller County	11,638 1 4	6,600 16 8
Inangahua County	17,552 14 8	10,530 17 10
Grey County	20,419 4 0	12,484 3 2
Westland County	11,008 15 6	6,724 6 10
Taieri County	499 15 0	333 3 4
Lake County	7,145 6 1	4,926 14 6
Tuapeka County	14,695 7 8	8,653 7 2
Cromwell Borough	500 0 0	250 0 0
Wallace County	1,309 6 0	662 19 8
Vincent County	1,532 0 0	850 0 0
Maniototo County	518 10 0	332 0 0
Fiord County	300 0 0	200 0 0
Waitaki County	41 12 0	20 16 0
Southland County	2,355 0 0	1,426 7 4
	168,324 1 5	101,340 14 0
Diamond and other drills	5,170 11 4	3,428 11 4
Wharves	435 15 9	285 15 9
Aids to prospecting	78,638 11 10	29,780 8 6
Water-races	33,368 14 0	29,983 1 8
Drainage- and tailings-channels	31,892 14 0	21,603 19 7
Aid towards treatment of ores	3,164 0 6	2,514 0 6
Roads wholly constructed by Mines Department	308,480 12 1	308,480 12 1
Roads to open up mines other than gold	6,146 9 10	4,759 6 2
Tracks to open up mineral lands	325 8 1	325 8 1
Repairing flood-damages	500 0 0	500 0 0
Artesian-well boring, Maniototo Plains	800 0 0	800 0 0
Resumption of land for mining	3,112 7 0	3,112 7 0
Aid towards construction of telephone-lines	60 0 0	50 0 0
Prospecting deep levels	51,000 0 0	25,500 0 0
	691,419 5 10	32,464 4 8

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RETURN showing the VALUE of the SALES of WATER, and EXPENDITURE on, and COLLATERAL ADVANTAGES derived from, the Working of the WATER-RACES constructed and maintained by GOVERNMENT during the Year ending 31st March, 1903.

Name of Water-race.	Value of Sales of Water and Channel-fees.	Expenditure on Maintenance.	Profit or Loss.	Cost of Construction.	Total Cost of Construction	Average Number of Men employed.	Approximate Amount of Gold obtained.	Value of Gold obtained.	Average Weekly Earnings of Men after deducting Value of Sales of Water and Channel-fees.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.		Oz.	£ s. d.	£ s. d.
Waimea	814 17 2	787 16 7	27 0 7	147,463 7 9	219,169 18 4	28·91	2,436	9,500 8 0	5 18 9
Kumara	1,528 14 4	1,684 16 6	156 2 2*	49,741 12 5		40·00	3,056	11,918 8 0	4 19 10
Kumara Sludge-channel	..	..	..	21,964 18 2		..	..	..	..
Nelson Creek	..	..	..	..	90,722 10 8	..	..	..	..
Argyle	..	..	..	..	15,151 15 3	..	..	..	..
Mikonui	..	..	..	..	25,927 4 6	..	..	..	..
Mount Ida	1,521 16 7	1,405 9 10	116 6 9	73,123 14 3	73,123 14 3	51·16	2,501	9,628 17 0	1 6 0
Blackstone Hill	60 3 3	17 4 0	42 19 3			2·00	120	462 0 0	3 17 3
Callaghan's	492 11 1	351 14 7	140 16 6	6,027 15 6	6,027 15 6	13·5	1,225	4,777 10 0	6 1 7
Totals	4,418 2 5	4,247 1 6	171 0 11	298,321 8 1	430,122 18 6	..	9,338	36,287 3 0	..

* Loss on working.

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WARDEN'S COURT TABLES.

No. 1.

STATEMENT showing the REVENUE of the GOLDFIELDS collected in the several DISTRICTS of the COLONY of NEW ZEALAND, for the Period from the 1st January to the 31st December, 1902.

District.	Miners' Rights.	Business Licenses, Machine and Residence Sites.	Water-races, Sluices, &c.	Gold-mining Leases, Rents, and Royalties.	Registration.	Fees and Fines, Wardens' Courts.	Miscellaneous.	Totals.
AUCKLAND.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Thames ..	301 15 0	..	1 0 0	1,310 12 10	31 8 0	17 5 0	413 11 3	2,075 12 1
Te Aroha ..	46 0 0	450 18 7	6 10 0	56 8 0	7 2 0	2 19 0	3 19 6	573 17 1
Coromandel ..	76 10 0	127 5 6	..	559 3 2	7 18 0	28 17 0	1 6 0	800 19 8
Ohinemuri ..	127 10 0	..	..	1,946 15 10	..	98 16 0	484 10 0	2,657 11 10
Puriri ..	1 10 0	1 0 0	..	52 17 6	..	..	14 0 0	69 7 6
*Tauranga ..	..	..	..	..	..	..	..	..
†Waihi ..	55 5 0	..	..	748 19 0	10 9 0	19 6 0	127 18 6	961 17 6
Totals ..	608 10 0	579 4 1	7 10 0	4,674 16 4	56 17 0	167 3 0	1,045 5 3	7,139 5 8
NELSON.								
Collingwood ..	24 5 0	..	..	402 6 11	2 3 0	14 4 0	86 2 11	529 1 10
Westport ..	85 10 0	20 19 0	6 9 0	857 5 10	0 12 0	46 6 0	351 13 4	1,368 15 2
Charleston ..	33 10 0	0 9 0	1 5 0	57 11 2	1 14 0	..	..	94 9 2
Ahaura ..	73 15 0	..	0 17 6	1,597 15 8	21 14 0	..	155 1 6	1,849 3 8
Wangapeka ..	3 5 0	..	..	44 2 6	1 7 0	..	0 5 0	48 19 6
Reefton ..	109 5 0	..	..	1,852 8 5	..	46 4 0	106 8 6	2,114 5 11
Lyell and Murchison	32 10 0	0 2 0	..	518 13 6	..	21 0 0	132 8 7	704 14 1
Motueka ..	1 15 0	..	..	7 12 9	0 12 0	..	..	9 19 9
Totals ..	363 15 0	21 10 0	8 11 6	5,337 16 9	28 2 0	127 14 0	831 19 10	6,719 9 1
MARLBOROUGH.								
Havelock ..	15 5 0	1 10 0	..	108 5 2	0 5 0	4 17 0	1 6 0	131 8 2
Blenheim ..	7 0 0	..	..	286 14 7	2 10 0	5 0 0	6 9 0	307 13 7
Totals ..	22 5 0	1 10 0	..	394 19 9	2 15 0	9 17 0	7 15 0	439 1 9
WESTLAND.								
Hokitika and Kanieri	68 0 0	..	3 0 0	532 6 6	14 12 0	13 15 0	1 11 5	633 4 11
Greymouth ..	160 5 0	..	2 0 0	2,563 9 0	0 7 0	65 4 6	2,775 6 7	5,566 12 1
Ross	34 0 0	..	4 5 0	701 4 0	13 18 0	22 2 0	38 12 10	814 1 10
Stafford ..	39 15 0	..	9 15 0	214 7 6	3 2 0	19 13 0	54 11 10	341 4 4
Kumara ..	73 0 0	..	..	557 11 2	20 16 0	31 16 0	335 16 10	1,019 0 0
Okarito ..	6 10 0	..	..	17 3 4	0 8 0	3 8 0	..	27 9 4
Totals ..	381 10 0	..	19 0 0	4,586 1 6	53 3 0	155 18 6	3,205 19 6	8,401 12 6
CANTERBURY.								
Ashburton ..	1 5 0	..	..	1 0 0	0 1 0	..	..	2 6 0
OTAGO AND SOUTHLAND.								
Tapanui ..	2 0 0	..	..	26 16 0	0 1 0	0 14 0	..	29 11 0
Hindon ..	34 15 0	..	..	64 10 0	0 13 0	2 0 0	3 16 0	105 14 0
Naseby ..	61 0 0	14 17 7	18 17 6	412 13 10	..	41 16 0	65 3 9	614 8 8
Roxburgh, Alexandra, Clyde, Black's	28 0 0	11 15 0	19 5 0	2,119 12 11	38 4 0	64 9 6	798 12 8	3,079 19 1
Pembroke ..	5 0 0	..	..	3 0 0	0 4 0	..	..	8 4 0
Cromwell ..	67 10 0	10 13 0	7 7 6	1,010 14 3	28 18 0	56 12 6	177 11 3	1,358 6 6
Queenstown ..	49 10 0	..	0 10 0	387 12 10	5 7 0	40 2 0	35 11 2	518 13 0
Arrowtown ..	18 10 0	2 0 0	..	409 17 5	7 14 0	30 11 0	21 11 6	490 3 11
Lawrence ..	77 10 0	0 1 0	6 5 0	1,096 10 10	3 19 0	22 8 0	42 13 3	1,249 7 1
Waikaia ..	2 15 0	6 0 0	2 2 0	287 13 0	1 18 0	8 9 0	36 14 9	345 11 9
Orepuki ..	..	..	..	7 12 5	..	9 13 0	15 12 0	32 17 5
Riverton and Longwood	24 15 0	..	..	359 8 10	..	10 5 0	23 0 0	417 8 10
Wyndham ..	2 5 0	..	0 10 0	62 10 3	0 7 0	1 11 0	1 13 6	68 16 9
Middlemarch ..	0 15 0	..	..	2 15 0	0 3 0	..	..	3 13 0
Gore	4 5 0	..	..	286 2 9	2 16 0	12 9 0	9 17 7	315 10 4
Totals ..	378 10 0	45 6 7	54 17 0	6,537 10 4	89 4 0	301 0 0	1,231 17 5	8,638 5 4
Grand totals ..	1,755 15 0	647 10 8	89 18 6	21,532 4 8	230 2 0	761 12 6	6,322 17 0	31,340 0 4

* All records from 13th January to 16th November destroyed by fire. † Office opened on 27th March, 1902.

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No. 2.

STATEMENT showing the REVENUE of the GOLDFIELDS collected in the several DISTRICTS of the COLONY of NEW ZEALAND, for the Period from 1st January to 31st March, 1903.

District.	Miners' Rights.	Business Licenses, Machine and Residence Sites.	Water-races, Sluices, &c.	Gold-mining Leases, Rents, and Royalties.	Registration.	Fees and Fines, Wardens' Courts.	Miscellaneous.	Totals.
AUCKLAND.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Coromandel ..	27 10 0	26 10 0	..	94 10 9	2 11 0	10 19 0	2 11 0	164 11 9
Te Aroha ..	17 10 0	129 17 11	..	15 16 5	1 19 0	..	0 10 0	165 13 4
Ohinemuri ..	20 10 0	..	..	483 4 10	..	17 7 0	226 5 6	747 7 4
Thames	77 10 0	..	..	521 15 10	10 4 0	33 10 0	40 4 1	683 3 11
Puhipuhi	1 0 0	..	..	2 17 6	..	..	2 14 9	6 12 3
Tauranga ..	0 15 0	..	..	4 16 3	..	..	0 2 0	5 13 3
Waihi	19 10 0	..	..	637 2 10	9 1 0	5 16 0	87 12 6	759 2 4
Totals ..	164 5 0	156 7 11	..	1,760 4 5	23 15 0	67 12 0	359 19 10	2,532 4 2
NELSON.								
Motueka ..	0 5 0	..	..	5 17 6	..	0 2 0	1 1 0	7 5 6
Collingwood ..	4 10 0	..	..	133 14 4	0 9 0	6 19 0	10 2 0	155 14 4
Westport ..	32 5 0	1 6 0	1 4 0	214 5 10	0 3 0	14 5 0	81 11 10	345 0 8
Charleston ..	10 0 0	..	..	10 12 9	1 16 0	..	..	22 8 9
Ahaura	17 5 0	..	..	435 5 11	5 13 0	..	19 2 6	477 6 5
Reefton	13 15 0	..	..	785 7 9	..	15 0 6	30 9 5	844 12 8
Wangapeka ..	1 0 0	..	..	33 5 0	0 6 0	0 10 0	0 7 0	35 8 0
Lyell and Murchison	8 0 0	0 2 0	..	92 4 6	..	9 3 0	22 15 3	132 4 9
Totals ..	87 0 0	1 8 0	1 4 0	1,710 13 7	8 7 0	45 19 6	165 9 0	2,020 1 1
MARLBOROUGH.								
Havelock ..	2 15 0	..	0 10 0	12 4 5	0 7 0	..	0 17 0	16 13 5
Blenheim ..	1 5 0	..	..	76 16 4	0 8 0	0 17 0	0 16 11	80 3 3
Totals ..	4 0 0	..	0 10 0	89 0 9	0 15 0	0 17 0	1 13 11	96 16 8
WESTLAND.								
Hokitika and Kanieri	17 0 0	..	0 5 0	285 11 1	4 4 0	1 5 0	0 6 0	308 11 1
Greymouth ..	25 15 0	..	..	513 12 9	..	19 4 6	1,153 12 2	1,712 4 5
Ross	5 5 0	..	1 5 0	212 9 1	1 8 6	2 11 0	11 13 0	234 11 7
Stafford	7 0 0	..	1 5 0	68 8 9	0 2 0	9 1 0	67 3 2	152 19 11
Okarito	4 0 0	..	..	11 17 3	0 10 0	1 14 0	5 19 2	24 0 5
Kumara ..	18 10 0	..	..	108 19 0	3 18 0	8 10 0	0 18 4	140 15 4
Totals ..	77 10 0	..	2 15 0	1,200 17 11	10 2 6	42 5 6	1,239 11 10	2,573 2 9
CANTERBURY.								
Ashburton ..	0 5 0	..	..	..	..	..	..	0 5 0
OTAGO AND SOUTHLAND.								
Middlemarch ..	0 15 0	..	..	1 0 0	0 1 0	..	..	1 16 0
Tapanui ..	0 5 0	..	..	17 9 6	..	..	..	17 14 6
Hindon	6 10 0	..	..	33 12 6	0 1 0	0 15 0	..	40 18 6
Naseby	16 15 0	1 16 0	3 17 6	164 12 9	..	11 9 0	19 7 0	217 17 3
Black's .. Alexandra Clyde .. Roxburgh	4 5 0	2 11 0	2 10 0	797 9 9	6 9 0	13 11 0	210 13 6	1,037 9 3
Cromwell ..	17 15 0	2 12 0	4 5 0	248 17 4	6 17 0	11 3 0	77 1 10	368 11 2
Queenstown ..	10 5 0	1 10 0	..	143 12 11	..	8 6 0	2 14 6	166 8 5
Arrowtown ..	6 15 0	1 0 0	0 5 0	130 11 6	..	4 16 0	7 16 0	151 3 6
Lawrence ..	18 15 0	..	1 0 0	399 14 8	3 3 0	5 3 0	1 1 0	428 16 8
Orepuki ..	..	..	..	1 17 6	..	3 8 0	3 18 0	9 3 6
Riverton and Longwood	8 0 0	..	..	193 19 9	..	2 5 0	6 18 0	211 2 9
Pembroke ..	1 0 0	..	..	0 15 0	0 3 0	..	..	1 18 0
Waikaia ..	1 5 0	6 0 0	0 6 0	45 11 3	0 8 0	3 15 0	6 4 0	63 9 3
Wyndham ..	0 15 0	..	..	16 5 0	..	..	..	17 0 0
Gore	2 0 0	..	..	145 17 9	0 6 0	1 13 0	0 5 0	150 1 9
Totals ..	95 0 0	15 9 0	12 3 6	2,341 7 2	17 8 0	66 4 0	335 18 10	2,883 10 6
Grand totals ..	428 0 0	173 4 11	16 12 6	7,102 3 10	60 7 6	222 18 0	2,102 13 5	10,106 0 2

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No. 3.

COMPARATIVE RETURN of REVENUE derived from the GOLDFIELDS in the several DISTRICTS of NEW ZEALAND during the Years 1901 and 1902, showing INCREASE or DECREASE under each Head of Revenue.

District.	Miners' Rights.	Business Licenses, &c.	Water-races, Sluices, &c.	Gold-mining Leases, Rents, and Royalties.	Registration.	Fees and Fines, Wardens' Courts.	Miscellaneous.	Gold Duty.	Totals.
AUCKLAND—	£	£	£	£	£	£	£	£	
Year 1902	609	579	8	4,675	57	167	1,045	22,012	29,152
Year 1901	755	919	24	4,918	127	236	1,067	18,567	26,613
Increase	..	..	..	..	..	..	..	3,445	2,539
Decrease	146	340	16	243	70	69	22	..	..
NELSON—									
Year 1902	364	21	8	5,338	28	128	832	..	6,719
Year 1901	530	..	5	4,642	39	273	1,538	..	7,027
Increase	..	21	3	696	..	..	..	..	..
Decrease	166	..	..	..	11	145	706	..	308
MARLBOROUGH—									
Year 1902	22	1	..	395	3	10	8	..	439
Year 1901	37	1	4	432	7	49	22	..	552
Increase	..	..	..	..	..	..	..	..	..
Decrease	15	..	4	37	4	39	14	..	113
CANTERBURY—									
Year 1902	1	..	..	1	..	..	..	..	2
Year 1901	3	..	..	50	..	..	..	..	53
Increase	..	..	..	..	..	..	..	..	..
Decrease	2	..	..	49	..	..	..	..	51
WESTLAND—									
Year 1902	381	..	19	4,586	53	156	3,206	..	8,401
Year 1901	596	10	47	3,887	58	188	3,576	..	8,362
Increase	..	..	..	699	..	..	..	..	39
Decrease	215	10	28	..	5	32	370	..	..
OTAGO—									
Year 1902	379	45	55	6,588	89	301	1,232	..	8,689
Year 1901	816	28	45	8,658	107	293	462	..	10,409
Increase	..	17	10	..	..	8	770	..	..
Decrease	437	..	..	2,120	18	..	..	..	1,770
Total increase	..	..	..	..	..	..	..	3,445	336
Total decrease	981	311	35	1,054	108	277	342	..	..

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No. 4.

COMPARATIVE RETURN of the TOTAL AMOUNTS of GOLDFIELDS REVENUE (exclusive of Gold Duty) collected in the several Districts during the Years 1901 and 1902 and the Quarters ending 31st March, 1902 and 1903 respectively, showing the INCREASE or DECREASE in respect of each District.

District.	Years 1901 and 1902.				Quarters ending 31st March, 1902, and 31st March, 1903.			
	1901.	1902.	Increase.	Decrease.	1902.	1903.	Increase.	Decrease.
AUCKLAND.	£	£	£	£	£	£	£	£
Coromandel	832	801	..	31	260	165	..	95
Te Aroha	1,003	574	..	429	164	166	2	..
Thames	1,842	2,076	234	..	518	683	165	..
Puhipuhi	..	69	69	..	..	6	6	..
Ohinemuri	4,330	2,658	..	1,672	1,458	747	..	711
*Tauranga	39	..	..	39	11	6	..	5
Waihi	..	962	962	..	..	759	759	..
NELSON.								
Motueka	87	10	..	77	5	7	2	..
Collingwood	397	529	132	..	173	156	..	17
Westport	1,614	1,369	..	245	277	345	68	..
Charleston	219	94	..	125	43	23	..	20
Ahaura	2,121	1,849	..	272	517	477	..	40
Reefton	1,834	2,114	280	..	848	845	..	3
Wangapeka	72	49	..	23	2	35	33	..
Lyell and Murchison ..	683	705	22	..	242	132	..	110
MARLBOROUGH.								
Havelock	389	131	..	258	56	17	..	39
Blenheim	163	308	145	..	78	80	2	..
WESTLAND.								
Hokitika ..	970	633	..	337	288	309	21	..
Kanieri ..								
Greymouth	5,229	5,567	338	..	2,255	1,712	..	543
Ross	495	814	319	..	154	235	81	..
Stafford and Goldsborough	454	341	..	113	109	153	44	..
Okarito	178	27	..	151	27	24	..	3
Kumara	1,036	1,019	..	17	259	141	..	118
CANTERBURY.								
Ashburton	53	2	..	51	1	..	..	1
OTAGO AND SOUTHLAND.								
Hindon	162	106	..	56	39	41	2	..
Naseby	853	614	..	239	206	218	12	..
Alexandra ..								
Black's ..	2,593	3,080	487	..	1,078	1,037	..	41
Clyde ..								
Roxburgh ..								
Cromwell	1,537	1,358	..	179	419	369	..	50
Arrowtown	859	490	..	369	261	151	..	110
Queenstown	1,299	519	..	780	193	166	..	27
Pembroke	8	8	..	..	1	2	1	..
Lawrence	1,341	1,249	..	92	509	429	..	80
Waikaia	345	346	1	..	88	63	..	25
Tapanui	30	30	..	..	18	18	..	..
Orepuki, Preservation, Longwood, and Riverton	906	450	..	456	125	220	95	..
Wyndham	164	69	..	95	15	17	2	..
Middlemarch	26	4	..	22	2	2	..	..
Gore	286	316	30	..	129	150	21	..
Totals	34,449	31,340	3,019	6,128	10,828	10,106	1,316	2,038
Net decrease ..	..	3,109	..	3,109	..	..	..	722
Net increase ..	..	..	..	..	..	..	..	..

* All records, from 1st January to 16th November, 1902, destroyed by fire.

No. 5.

RETURN of GOLD DUTY credited to LOCAL BODIES for the Year ended 31st December, 1902, and Quarter ended 31st March, 1903.

Local Body.	For the Year ended 31st December, 1902.	For the Quarter ended 31st March, 1903.
	£ s. d.	£ s. d.
COUNTIES—		
Coromandel	1,107 9 5	3 13 0
Ohinemuri	6,175 8 3	1,104 14 4
Piako	24 16 10	..
Tauranga	2 3 5	..
Thames	1,161 3 4	377 18 1
BOROUGHS—		
Thames	460 18 3	190 7 5
Waihi	13,079 17 8	3,639 10 0
Totals	22,011 17 2	5,316 2 10

The Treasury, Wellington, 5th June, 1903.

ROBERT J. COLLINS,
Accountant to the Treasury.

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No. 6.

RETURN of the QUANTITY and VALUE of GOLD ENTERED for DUTY* for EXPORTATION from NEW ZEALAND from 1st APRIL, 1857, to 31st DECEMBER, 1902.

PRODUCE OF THE GOLDFIELDS IN		DURING THE QUARTER ENDED 31ST DECEMBER, 1902.		ENTERED FOR EXPORTATION TO THE 30TH SEPTEMBER, 1902.		TOTAL ENTERED FOR EXPORTATION FROM NEW ZEALAND TO THE 31ST DECEMBER, 1902.	
County or Borough.	District.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
		Oz.	£	Oz.	£	Oz.	£
County of Thames ..	Auckland	4,151	15,218				
" Ohinemuri ..		12,651	46,316				
" Coromandel		4,315	18,079				
" Piako ..		226	951				
Borough of Thames ..		1,532	6,302				
" Waihi ..		37,557	131,032				
		60,432	217,898	2,948,583	11,016,945	3,009,015	11,234,843
	Wellington ..	..	..	188	706	188	706
County of Marlborough	Marlborough ..	..	..	87,654	341,479	87,654	341,479
County of Collingwood	Nelson ..	619	2,447	1,691,536	6,705,561	1,692,155	6,708,008
" Waimea ..							
County of Buller ..	West Coast	1,321	5,302				
" Inangahua ..		14,138	56,554				
" Grey ..		9,496	37,984				
" Westland ..		2,953	11,813				
Borough of Kumara ..		..	..				
" Hokitika ..		38	152				
" Ross ..		335	1,339				
		28,281	113,144	4,747,393	18,890,410	4,775,674	19,003,554
	Canterbury ..	..	..	99	387	99	387
County of Taieri ..	Otago	1,013	4,046				
" Tuapeka ..		11,959	48,164				
" Vincent ..		19,321	76,996				
" Maniototo ..		1,933	7,749				
" Waihemo ..		498	2,010				
" Waitaki ..		381	1,522				
" Lake ..		1,635	6,610				
" Wallace ..		2,075	8,417				
" Waikouaiti ..		..	..				
" Bruce ..		17	69				
" Clutha ..		..	..				
" Fiord ..		33	133				
" Southland ..		7,001	28,266				
" Stewart Island		..	..				
		45,866	183,982	5,961,649	23,637,533	6,007,515	23,821,515
	Unknown ..	..	..	207	824	207	824
Totals		135,198	517,471	15,437,309	60,593,845	15,572,507	61,111,316

* Gold duty abolished in the South Island on the 31st March, 1891, by "The Gold Duty Abolition Act, 1890."

No. 7.

COMPARATIVE RETURN of the QUANTITY and VALUE of GOLD ENTERED for DUTY for EXPORTATION from NEW ZEALAND for the YEARS ended 31st DECEMBER, 1902 and 1901.

PRODUCE OF THE GOLDFIELDS IN THE DISTRICT OF	DURING THE QUARTER ENDED—				TOTALS FOR YEAR 1902.		TOTALS FOR YEAR 1901.	
	31st March, 1902.	30th June, 1902.	30th September, 1902.	31st December, 1902.	Quantity.	Value.	Quantity.	Value.
	Oz.	Oz.	Oz.	Oz.	Oz.	£	Oz.	£
Auckland ..	44,872	52,036	44,243	60,432	201,583	721,977	191,968	695,551
Marlborough ..	200	1	400	..	601	2,404	133	513
Nelson ..	573	2,310	2,445	619	5,947	23,649	7,212	28,138
West Coast ..	27,020	33,734	29,761	28,281	118,796	475,272	113,286	454,006
Canterbury ..	2	..	..	..	2	7	22	83
Otago ..	26,060	45,595	63,595	45,866	181,116	728,124	142,940	575,492
Totals for 1902	98,727	133,676	140,444	135,198	508,045	1,951,433	..	..
Totals for 1901	115,283	102,195	113,186	124,897	..	..	455,561	1,753,783

Department of Trade and Customs,
Wellington, 28th January, 1903.

W. T. GLASGOW,
Secretary and Inspector.

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No. 8.

RETURN of the QUANTITY and VALUE of GOLD ENTERED for DUTY* for EXPORTATION from NEW ZEALAND from 1st APRIL, 1857, to 31th MARCH, 1903.

PRODUCE OF THE GOLDFIELDS IN		DURING THE QUARTER ENDED 31ST MARCH, 1903.		ENTERED FOR EXPORTATION TO THE 31ST DECEMBER, 1902.		TOTAL ENTERED FOR EXPORTATION FROM NEW ZEALAND TO THE 31ST MARCH, 1903.	
County or Borough.	District.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
		Oz.	£	Oz.	£	Oz.	£
County of Thames ..	Auckland	1,542	5,987				
" Ohinemuri ..		11,047	38,903				
" Coromandel		37	125				
" Piako ..		..	..				
Borough of Thames ..		213	854				
" Waihi ..		33,608	117,632				
		46,447	163,501	3,009,015	11,234,843	3,055,462	11,398,344
	Wellington ..	..	..	188	706	188	706
County of Marlborough	Marlborough ..	..	..	87,654	341,479	87,654	341,479
County of Collingwood	Nelson ..	861	3,348	1,692,155	6,708,008	1,693,016	6,711,356
" Waimea ..							
County of Buller ..	West Coast	4,105	16,425				
" Inangahua ..		13,767	55,066				
" Grey ..		9,842	39,342				
" Westland ..		5,195	20,780				
Borough of Kumara ..		..	..				
" Hokitika ..		39	157				
Ross ..		675	2,699				
		33,623	134,469	4,775,674	19,003,554	4,809,297	19,138,023
	Canterbury ..	..	..	99	387	99	387
County of Taieri ..	Otago ..	854	3,411				
" Tuapeka ..		10,580	42,405				
" Vincent ..		9,922	39,693				
" Maniototo ..		3,597	14,462				
" Waihemo ..		1,382	5,582				
" Waitaki ..		398	1,548				
" Lake ..		2,416	9,754				
" Wallace ..		1,846	7,451				
" Waikouaiti		..	..				
" Bruce ..		60	242				
" Clutha ..		..	..				
" Fiord ..		250	1,000				
" Southland ..		5,716	23,131				
" Stewart Isl'd		..	..				
		37,021	148,679	6,007,515	23,821,515	6,044,536	23,970,194
Unknown	..	..	..	207	824	207	824
Totals ..	..	117,952	449,997	15,572,507	61,111,316	15,690,459	61,561,313

* Gold duty abolished in the South Island on 31st March, 1891, by "The Gold Duty Abolition Act, 1890."

No. 9.

COMPARATIVE RETURN for the QUARTERS ended 31st MARCH, 1903, and 31st MARCH, 1902.

District of	Quarter ended 31st March, 1903.		Quarter ended 31st March, 1902.	
	Quantity.	Value.	Quantity.	Value.
	Oz.	£	Oz.	£
Auckland	46,447	163,501	44,872	160,586
Marlborough	..	..	200	800
Nelson	861	3,348	578	2,293
West Coast	33,623	134,469	27,020	108,102
Canterbury	..	..	2	7
Otago	37,023	148,679	26,060	104,911
Totals	117,954	449,997	98,727	376,699

Department of Trade and Customs,
Wellington, 5th May, 1903.

W. T. GLASGOW,
Secretary and Inspector.

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No. 10.

STATEMENT showing the PRICE of GOLD per OUNCE, PRICE charged per TON for CRUSHING QUARTZ or CEMENT, and PRICES charged for WATER per SLUICE-HEAD per WEEK, during the Year ending 31st December, 1902.

District.		Price of Gold per Ounce.	Price charged per Ton for crushing Quartz or Cement.	Price charged for Water per Sluice-head per Week.	Remarks.
		£ s. d.	£ s. d.	£ s. d.	
AUCKLAND—	Thames	2 16 0	0 5 6	£3 to £4	..
	Coromandel	£2 10s. to £3 2s. 6d.	0 10 0	..	..
	Paeroa	4 4 0	..	..	No public batteries; no water sold.
	Te Aroha	4 4 0	..	..	No public batteries.
	Puhipuhi	..	..	..	None sold on field.
	Tauranga	..	..	..	No mines crushing.
MARLBOROUGH—	Havelock	3 17 0	..	..	..
	Blenheim	£3 12s. to £3 15s.	1 0 0	..	..
NELSON—	Wangapeka	£3 11s. to £3 15s.	..	..	..
	Motueka	3 13 0	..	..	..
	Charleston	3 19 0	0 1 6	2 5 0	..
	Inangahua	£3 18s. to £4	..	..	..
	Collingwood	3 13 6	..	..	..
	Takaka	3 14 6	..	..	..
	Westport	3 17 0	..	..	..
	Murchison .. Lyell	3 17 0	0 10 0	..	..
WESTLAND—	Hokitika, Kanieri, and Waimea ..	3 18 0	..	2 0 0	40 in.
	Totara and Ross	3 18 0	..	..	..
	Stafford	3 18 0	..	1 10 0	..
	Greymouth	3 18 0	0 12 0	0 10 0	..
	Kumara	3 18 0	..	1 0 0	20 in. by 2 in. opening.
	Ahaura	3 18 6	0 10 0	1 0 0	..
	Okarito	3 18 0	..	..	..
OTAGO AND SOUTHLAND—	Hindon	3 16 6	..	..	..
	Tuapeka	3 17 6	..	3 0 0	..
	Longwood	3 10 6	..	..	..
	Preservation and Waiau ..	3 15 6	..	..	..
	Orepuki and Round Hill ..	3 18 6	..	..	..
	Arrow (Wakatipu Goldfield) and Queenstown	3 17 0	0 15 0	0 8 0	20 in. by 2 in.
	Mount Ida .. Macrae's, Hyde .. Hamilton, Serpentine	3 17 0	..	1 0 0	40 in. by 1 in.
	Macrewhenua	3 17 0	..	1 0 0	20 in. by 2 in., 4 in. pressure.
	Cromwell	3 17 0	0 8 0	0 4 0	..
	Waikaia	3 17 6	..	1 15 0	..
	Tapanui	3 17 6	..	..	..
	Wyndham	£3 16s. to £3 18s.	..	..	..
	Roxburgh .. Clyde and Alexandra Black's	3 17 6	..	..	Water used by owners.
	Gore	4 0 0	..	..	..

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No. 11.

RETURN showing the AVERAGE PRICES of PROVISIONS and LIVE-STOCK for the Year ending 31st December, 1902.

District.	Beer.	Brandy.	Bread—Wheaten.	Butter—Fresh.	Butter—Salt.	Cheese.	Coffee.	Flour.	Grain—Wheat.	Live-stock.					Meat.			Milk.	Rice.	Salt.	Sugar.	Tea.	Tobacco.	Wine.
										Cattle—Horned.	Goats.	Horses.	Sheep.	Swine.	Beef.	Mutton.	Pork.							
	Per. hhd.	Per gall.	Per lb.	Per lb.	Per lb.	Per lb.	Per lb.	Per 100 lb.	Per Im. bushel.	Per head.	Per head.	Per head.	Per head.	Per head.	Per lb.	Per lb.	Per lb.	Per qt.	Per lb.	Per lb.	Per lb.	Per lb.	Per lb.	Per gallon.
AUCKLAND—			d.							£		£			d.	d.	d.	d.	d.	d.	d.			
Thames	90/	27/	1½	/9	/6	/6	1/10	10/6	4/	6	12/	9–40	15/	40/	5	4	6	3	3½	1	3	2/	6/	15/–20/
Paeroa..	80/	27/	2	1/1	/9	/7½	1/6	15/	5/9	7	..	15–40	15/–20/	40/–60/	5	4½	6	4	2½	1	2½	1/6	5/6	18/
Coromandel	90/	25/	1⅔	1/1	/7	/6	1/10	13/	4/	7	10/	5–40	12/6	20/	5	5	7	4	2⅔	1	2⅔	2/	6/	17/6
Tauranga	90/	30/	2	1/	..	/8	1/8–2/	14/6	5/6	9	..	10	12/	30/	3–8	3–5	6	3	3	1	2½	1/–2/10	5/6–6/6	18/
Te Aroha	80/	27/	2	1/1	/9	/7½	1/6	15/	5/9	8	..	15–40	17/6–20/	39/–60/	4–6	4	6	3	2½	1	2½	1/6	5/6	18/
Waihi	95/	27/6		1/2	/10	/8	1/8–2/3	15/	6/	7	..	20–40	15/	10/	4½	4½	5	4	3	1	2½	1/–3/	5/6	40/–50/
MARLBOROUGH—																								
Blenheim	80/	30/	2	1/	/10	/7	1/9	11/	4/3	6	..	15	9/6	50/	4½	4½	6	3	3	1	3	2/	5/3	18/
Havelock	90/	28/	2½	/9	..	/7	2/	15/6	7/	5–10	..	8–30	12/	..	6	5	5	4	3	1	3	2/	6/	28/
NELSON—																								
Wangapeka	..	..	2	/5–/10	/8	/8	1/8	17/	5/6	5–7	..	12–30	12/–15/	30/–40/	5	5	6	3	4	1	4	2/–3/	8/	..
Collingwood	85/	30/	2	/11	/9	/8	1/9–2/6	15/	5/6	4/10–5/10	..	10–50	10/–12/	10/–25/	5–6	4–5½	5–6	4	3	2	3	1/10–2/6	6/	16/
Takaka	85/	26/	2	/9	/8	/7	1/9	14/	5/3	3–6	..	5–45	10/	15/–30/	4	3	5	3	3	1	3	1/2–2/6	6/	14/
Inangahua	90/	25/	2	1/1	/11	/8	2/	15/	4/6	7/10/0	10/	30–70	20/	50/	6	6	6	5	3	1	3	2/	6/	15/–24
Lyell .. }	110/	26/	2½	1/2	1/	/9	2/	20/	7/6	6/10/0	7/6	25	17/6	45/	5	5	6	6	4	2	3	2/	6/	20/
Murchison .. }																								
Westport	80/	26/	2	1/	/9	/7	2/	12/6	5/	7/10/0	15/	25	16/	60/	6	5	6	5	3	1	2½	1/9	5/6	16/6
Charleston	81/	26/	1½	1/	1/	/7	2/	10/6	5/	5	5/	15/	12/	40/	4½	4	6	6	4	1	3	1/10	6/	16/
Ahaura	112/6	25/	2	1/	/9	/8	1/6	16/	6/	10–12	5/	15–50	12/	17/6	6	6	8	4	4	3½	3	2/	5/6–7/6	15/
WESTLAND—																								
Stafford .. }	100/	30/	2	1/	1/	/8	1/9	13/6	6/	8	5/	18	20/	40/	6	6	8	4	3	¾	3	2/	6/	26/
Waimea .. }																								
Hokitika and Kanieri ..	100/	25/	2	1/	1/	/7	1/6	14/	5/	10	..	26	20/	60/	8	7	8	..	2½	1	3	1/9	5/6	15/
Ross	120/	24/6	2	1/3	1/	/8	2/	12/6	6/	10	..	20–50	18/6	50/	8	6–8	8	4	3	2	3½	2/	6/6	15/
Okarito	174/	30/	3	1/6	1/3	/10	2/	18/	6/6	8	..	18	20/	..	5½	3½	..	..	4	2	3½	3/	7/	15/
Kumara	85/	23/6	2½	1/3	1/	/8	1/6	17/6	6/	8–14	5/	9–30	18/	40/–100/	8	8	7	6	3	2	3	2/	7/–8/	22/
Greymouth	90/	26/	2	1/2	1/1	/7½	1/9	12/	5/6	3/10–9	..	9–45	10/–15/	21/–67/	5–8	4–8	7	4	3	1¼	2½	2/	5/	16/6
OTAGO—																								
Hindon	..	..	2	1/3	/10–1/	/9	2/3	16/	..	6–12	..	12–40	12/–16/	..	4–8	4½	..	4	3½	1½	3½	2/3	6/	..
Tuapeka	90/	26/	1½	1/	/10	/6	1/10	8/	2/6	5	..	10–30	10/	20/–40/	5	3	6	3	3	1	3½	2/	5/6	18/
Tapanui	..	..	1⅔	/8	/8	/7	1/7	14/	4/	9	..	20–40	14/	60/	7	4	4½	3	2½	1	2½	1/9	5/2	..
Cromwell	100/	27/	2½	1/2	1/	/8	1/9	8/6	3/	9	..	15–55	12/6–18/6	40/	7	6	4	4	3	1½	3½	2/	5–7/6	18/
Clyde .. }																								
Alexandra .. }	120/	28/	1⅔	1/3	1/2	/8	1/9	13/	5/	2/10–6	..	7–45	5/–17/	40/	6	5	8	5	2	1½	3	2/	5/–7/	22/
Roxburgh .. }																								
Black's .. }																								
Queenstown	80/	28/	2	1/	/10	/8	1/9	15/	3/	3	..	25	10/	40/	6	6	8	4	3	1	3	2/	6/	28/
Wyndham	100/	28/	1⅔	1/	/9	/6	1/9	8/6	3/	5	..	15–50	12/	60/	4–9	4–7	5	4	3	1	3	1/8–2/6	5/	22/6
Arrow (Wakatipu Goldfield)	100/	28/	2½	1/2	1/	/8	1/9	15/6	3/	7	10/	28	13/	50/	7	5	7	4	3	1½	3	1/9	5/3	20/
Mount Ida .. }	102/	27/–42/	2	1/4	1/	/8	1/6–2/3	17/6	6/	8–11	..	12–45	16/–19/	55/–65/	6–8½	5–6	7–8	5	3	2	3	1/6–2/4	5/3–6/	18/–25/
Nenthorn .. }																								
Waikaia	90/	30/	2⅓	1/	/10	/9	2/	18/	..	6–9	..	10–30	12/–18/	28/–30/	8	6	6	4	4	2	4	1/9–3/	6/	20/
Riverton and Orepuki ..	90/	35/	1⅔	/8	/8	/7	1/6	14/	5/	12	25/	20	17/	25/	7	5	8	3	2½	1	2½	2/	5/	20/
Gore	100/	28/	2	/8	/6	/6	1/	8/	2/	6	..	25	12/	40/	3	3	5	3½	2	1	3½	2/4	5/6	18/

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No. 12.

TABLE showing the AVERAGE RATE of WAGES per WEEK for the Year ending 31st December, 1902.

District.	General Managers.	Legal Managers.	Mining Managers.	Engineers.	Engine-drivers.	Stokers.	Blacksmiths.	Carpenters.	Miners.	Labourers.	Boys.	Chinese.	Agricultural Labourers.	Domestic Servants.
AUCKLAND—	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	
Coromandel	£4 10s. to £10	2 5 0	4 0 0	3 0 0	2 15 0	2 8 0	2 14 0	2 14 0	2 8 0	2 5 0	1 10 0	..	1 16 0	10/
Thames	£500 to £1000	£1 to £2	£3 to £5	3 0 0	2 14 0	2 8 0	2 10 0	2 14 0	2 8 0	2 2 0	0 10 0	..	1 10 0	5/ to 15/
Te Aroha	10 0 0	..	5 0 0	..	..	..	3 0 0	2 18 6	2 8 0	2 8 0	..	..	..	..
Paeroa	£150 to £1200	£1 to £2	£4 to £8	£4 to £6	£2/10 to £3	£2/5–£2/11	£2/14 to £3	£2/17 to £3	£2/8 to £3	£2/5 to £2/8	1 10 0	..	£1 to £1/10	5/ to 15/
Tauranga	..	..	4 10 0	3 10 0	3 0 0	2 5 0	2 10 0	3 0 0	2 14 0	2 2 0	0 15 0	..	1 5 0	12/
Waihi	£150 to £1200	£1 to £2	£4 to £8	£4 to £6	£2/10 to £3	£2/5–£2/11	£2/14 to £3	£2/17 to £3	£2/8 to £3	£2/5 to £2/8	1 10 0	..	2 0 0	10/ to 15/
MARLBOROUGH—														
Havelock	..	..	3 10 0	3 10 0	2 14 0	2 8 0	2 14 0	3 0 0	2 14 0	2 2 0	..	..	1 10 0	8/ to 15/
Blenheim	..	..	..	2 10 0	3 0 0	2 8 0	2 10 0	2 14 0	2 14 0	2 8 0	0 12 0	..	£1 and found	8/ to 15/
NELSON—														
Collingwood	£6 to £8	..	£6 to £8	£3/10 to £4	3 0 0	2 10 0	3 0 0	2 17 0	2 14 0	£2/8 to £3	15/ to 20/	..	£2/5 to £3	8/ to 15/
Takaka	5 0 0	..	..	..	2 10 0	..	2 5 0	2 14 0	2 8 0	2 2 0	15/ and found	..	1 0 0	8/
Inangahua	..	£1 to £2	£4 to £10	4 0 0	£3/10 to £4	3 0 0	£3/10 to £4	£3/10 to £4	£2/17 to £3	2 11 0	1 10 0	..	£1 to £1/5	5/ to 20/
Charleston	..	..	5 0 0	5 0 0	3 12 0	3 0 0	3 10 0	3 10 0	3 0 0	2 14 0	15/ and found	..	£1/5 & found	10/ and found
Westport	..	10/ to 20/	4 0 0	..	3 0 0	2 8 0	3 0 0	3 12 0	2 14 0	2 8 0	1 10 0	..	..	12/–20/ found
Lyell and Murchison ..	..	..	5 0 0	4 0 0	3 10 0	2 10 0	3 10 0	3 5 0	2 15 0	2 0 0	1 0 0	0 15 0	..	12/
Ahaura	..	1 10 0	5 0 0	4 0 0	3 10 0	3 0 0	3 12 0	3 12 0	3 0 0	2 8 0	1 10 0	1 5 0	1 0 0	9/
WESTLAND—														
Waimea and Stafford ..	6 0 0	1 0 0	5 0 0	3 10 0	2 15 0	2 0 0	3 0 0	2 15 0	2 10 0	2 8 0	0 10 0	2 0 0	1 5 0	12/
Hokitika and Kanieri ..	5 0 0	1 0 0	4 0 0	4 0 0	3 0 0	3 0 0	3 12 0	3 12 0	2 14 0	2 14 0	..	1 0 0	1 0 0	10/ to 15/
Ross	..	1 10 0	6 0 0	4 10 0	3 0 0	3 0 0	3 10 0	3 10 0	3 0 0	3 0 0	1 10 0	..	..	12/6
Kumara	6 0 0	2 0 0	4 0 0	3 10 0	3 0 0	..	£3 to £3/10	£3 to £4	3 0 0	2 18 0	1 0 0	..	..	7/ to 15/
Greymouth	..	£1 to £2	£4 to £6	£3 to £5	3 0 0	2 10 0	£3 to £3/10	10/ to 14/ a day	£2/10 to £3	7/ to 10/ a day	8/ to 20/	20/–30/ found	£1 to £2 found	5/ to 15/
Okarito	..	..	4 10 0	4 10 0	3 10 0	2 8 0	3 12 0	3 12 0	2 14 0	2 14 0	..	..	£1/5 & found	10/
OTAGO AND SOUTHLAND—														
Hindon	..	1 11 3	4 10 0	5 0 0	3 0 0	..	3 0 0	..	2 14 0	2 8 0	..	..	..	..
Tuapeka	5 0 0	2 0 0	3 10 0	£4 to £5	2 10 0	2 2 0	2 14 0	3 0 0	2 2 0	2 0 0	0 10 0	1 0 0	1 0 0	10/ to 12/
Tapanui	..	..	..	3 5 0	3 5 0	..	2 14 0	2 14 0	2 8 0	2 2 0	1 0 0	..	1 16 0	10/
Cromwell	6 0 0	£1 to £4	4 10 0	£4 to £4/10	3 10 0	3 0 0	£3 to £3/10	3 0 0	3 0 0	£2 to £2/10	0 15 0	£1/5 to £1/10	18/ to 30/ and found	6/ to 15/
Clyde ..														
Alexandra ..	4 10 0	1 10 0	4 10 0	4 0 0	3 0 0	..	4 0 0	4 0 0	£2/8 to £3	2 8 0	1 0 0	1 5 0	£60 per ann. and found	7/6 to 15/
Black's ..														
Roxburgh ..														
Waikaia	..	2 0 0	4 0 0	4 0 0	2 10 0	..	3 0 0	3 0 0	2 8 0	2 2 0	0 16 0	1 0 0	1 0 0	12/6
Orepuki and Riverton ..	5 0 0	£40 per ann.	3 0 0	3 0 0	2 10 0	2 5 0	2 10 0	3 0 0	2 2 0	2 2 0	0 15 0	1 10 0	2 5 0	12/6
Arrow	6 0 0	0 10 0	4 0 0	4 0 0	3 0 0	2 10 0	3 0 0	3 0 0	3 0 0	2 8 0	0 12 0	1 16 0	1 2 6	12/6
Queenstown	5 0 0	0 10 0	4 0 0	4 0 0	3 0 0	2 10 0	3 0 0	3 0 0	3 0 0	2 8 0	0 15 0	1 5 0	1 5 0	12/6
Mount Ida	..	..	4 0 0	4 0 0	3 12 0	2 14 0	3 0 0	3 0 0	2 8 0	2 2 0	10/ to 15/	£1 and found	£1/5 & found	7/ to 12/
Gore..	..	1 5 0	4 0 0	4 0 0	2 8 0	2 8 0	3 0 0	..	3 0 0	2 8 0	..	..	2 2 0	10/
Wyndham	..	..	..	..	..	..	..	3 0 0	..	7/ a day	0 10 0	..	£1/5 & found	12/

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No. 13.

NUMBER of MACHINES employed in ALLUVIAL and QUARTZ-MINING, and the VALUE thereof, for the Year ending 31st December, 1902.

District.	Machinery employed in Alluvial Mining.														Machinery employed in Quartz-mining.								Approximate Value of all Mining Plant included in this Return.
	Steam-engines employed winding, crushing, &c.		Puddling-machines.	Whims.	Whips or Pulleys.	Sluices, Toms, and Sluice-boxes.	Water-wheels.	Hydraulic Hose.	Pumps.	Dredges.	Quicksilver and Compound Cradles.	Derricks.	Stamp-heads crushing Cement.	Boring-machines.	Steam-engines employed winding, crushing, &c.		Crushing-machines.	Stamp-heads.	Water-wheels.	Whims.	Whips or Pulleys.	Derricks.	Horizons.	
	No.	Aggregate h.p.													No.	Aggregate h.p.								
AUCKLAND—																								£
Paeroa	..	..	..	..	..	..	..	..	..	..	..	..	..	..	17	1,402	11	34	19	..	..	..	..	157,810
Coromandel	..	..	..	..	..	..	..	..	..	..	..	..	..	..	20	900	7	20	1	..	..	..	32	43,000
Thames	..	..	..	..	..	..	..	..	..	..	..	..	..	..	27	1,252	..	462	53	..	..	..	187	180,162
Te Aroha	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	65	1	10	2	..	..	..	..	2,700
Waihi	..	..	..	..	..	..	..	..	..	..	..	..	..	..	25	3,594	4	345	9	..	..	..	..	257,640
Totals ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	89	7,213	23	1,187	75	..	..	..	219	641,312
MARLBOROUGH—																								
Wakamarina ..																								
Cullen's Creek ..	2	16	..	..	..	26	..	2	2	1	.	..	..	..	..	..	..	..	..	..	..	..	..	3,000
Waikakaho ..																								
Blenheim ..	..	..	..	..	..	4	..	..	..	2	..	..	..	..	..	..	2	20	1	..	..	..	..	2,500
Totals ..	2	16	..	..	..	30	..	2	2	3	..	..	..	..	..	..	2	20	1	..	..	..	..	5,500
NELSON—																								
Wangapeka ..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	.	..	..	..	..	..	..	..	8,000
Collingwood ..	..	..	..	..	..	..	..	10	..	5	..	3	..	..	1	5	2	28	1	..	..	..	..	70,000
Takaka	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Inangahua ..	2	24	..	..	..	..	..	..	..	2	..	..	..	..	27	758	22	440	22	2	3	..	65	216,362
Charleston ..	..	..	..	..	..	95	6	71	..	..	..	..	24	..	..	..	..	..	..	..	..	..	..	800
Lyell	..	..	..	..	..	80	..	6	..	6	..	..	..	..	..	..	2	30	..	..	..	..	..	29,000
Murchison ..	..	..	..	..	..	422	1	8	..	3	..	..	..	..	..	..	..	.	..	..	..	..	..	18,000
Westport	..	..	..	..	..	47	6	26	..	..	..	..	22	..	..	..	7	44	7	..	..	..	..	11,500
Ahaura	..	..	..	..	..	700	1	500	..	20	..	1	..	..		..	2	11	2	..	..	..	..	74,000
Totals ..	2	24	..	..	..	1,344	14	625	..	37	..	4	46	..	28	763	35	553	32	2	3	..	65	427,662
WESTLAND—																								
Stafford	..	..	..	3	8	8,000	7	100	4	1	6	..	..	..	..	..	..	..	3	..	1	..	..	48,000
Ross	..	..	..	..	..	20	..	13	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	22,200
Hokitika and Kanieri	..	..	..	..	..	100	3	130	2	6	..	5	..	..	..	..	..	..	..	..	..	..	..	6,000
Greymouth ..	..	..	..	..	..	1,600	..	600	30	10	..	..	..	..	..	..	..	..	..	..	..	..	..	68,000
Kumara	1	4	60	..	..	150	2	90	..	4	..	..	..	..	..	..	..	..	..	..	..	..	..	25,000
Totals ..	1	4	60	3	8	9,870	12	933	36	23	6	5	..	..	..	..	..	..	3	..	1	..	..	169,200
OTAGO AND SOUTHLAND																								
Tapanui	..	..	..	..	..	2	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	2,000
Hindon	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	16	5	31	..	..	..	..	..	710
Tuapeka	..	..	..	..	..	360	..	25	..	23	..	..	..	..	2	16	3	15	2	..	..	..	..	80,000
Cromwell	..	..	..	..	..	..	5	3	..	24	..	..	..	1	4	40	7	34	1	..	..	..	..	171,000
Clyde and Alexandra																								
Roxburgh ..	2	12	..	..	2	1,600	3	25	4	57	..	1	..	2	..	..	2	15	1	..	1	..	..	375,000
Black's																								
Orepuki, Riverton, and Preservation	2	27	..	..	..	275	..	8	1	1	..	..	..	..	3	32	4	20	2	..	..	..	..	6,000
Waikaia (Switzers)	..	..	..	..	..	200	..	10	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	26,000
Arrow	1	5	..	..	..	150	..	30	5	4	..	1	20	..	1	42	2	30	..	..	..	..	..	20,000
Queenstown ..	..	..	..	..	..	400	..	50	2	3	..	..	..	..	1	8	5	75	..	..	..	..	..	46,000
Nimeby																								
Kyeburn and Clarke's																								
Hamilton's and Sowburn																								
Hyde and Fullerton's																								
Macrae's, Strath Taieri, and Shag Valley		..	34	..	..	109	3	61	2	1	..	..	..	..	3	30	13	89	6	1	1	..	..	42,000
Serpentine ..																								
St. Bathan's, Ida Valley, &c.																								
Gore	..	..	..	..	..	..	..	..	..	29	..	..	..	..	..	..	..	..	..	..	..	..	..	70,000
Totals ..	5	44	34	..	2	3,096	11	212	14	146	..	2	20	3	16	184	41	309	12	1	2	..	..	838,710

SUMMARY.

Auckland	..	..	..	..	..	..	..	..	..	..	..	..	..	..	89	7,213	23	1,187	75	..	..	..	219	641,312
Marlborough ..	2	16	..	..	..	30	..	2	2	3	..	..	..	..	..	..	2	20	1	..	..	..	..	5,500
Nelson	2	24	..	..	..	1,344	14	625	..	37	..	4	46	..	28	763	35	553	32	2	3	..	65	427,662
Westland	1	4	60	3	8	9,870	12	933	36	23	6	5	..	..	..	..	..	..	3	..	1	..	..	169,200
Otago	5	44	34	..	2	3,096	11	212	14	146	..	2	20	3	16	184	41	309	12	1	2	..	..	838,710
Totals ..	10	88	94	3	10	14,340	37	1,772	52	209	6	11	66	3	133	8,160	101	2,069	123	3	6	..	284	2,082,384

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No. 14

TABLE showing approximately the NUMBER, DESCRIPTION, and VALUE of the WATER-RACES, TAIL-RACES, DAMS, RESERVOIRS, and GROUND-SLUICES in Operation during the Year ending 31st December, 1902.

District.	Water-races.				Tail-races.		Dams.		Reservoirs.		Ground-sluices.		Approximate Total Cost.
	No.	Length in Miles.	No. of Sluice-heads.	Approximate Cost.	No.	Approximate Cost.	No.	Approximate Cost.	No.	Approximate Cost.	No.	Approximate Cost.	
				£		£		£		£		£	£
AUCKLAND—													
Coromandel ..	8	6	19	7,300	2	50	2	340	..	..	..	..	7,690
Thames.. ..	19	25	160	58,000	7	360	70	770	2	5,000	..	..	64,130
Te Aroha ..	2	2	20	3,000	..	..	..	..	..	..	..	..	3,000
Paeroa	14	8	99	14,550	1	1,000	7	3,000	..	..	..	..	18,550
Totals ..	43	41	298	82,850	10	1,410	79	4,110	2	5,000	..	..	93,370
MARLBOROUGH—													
Blenheim ..	23	17	110	3,300	7	165	5	..	..	..	..	..	3,465
Havelock ..	12	11	24	674	2	25	2	50	1	25	..	..	774
Totals ..	35	28	134	3,974	9	190	7	50	1	25	..	..	4,239
NELSON—													
Wangapeka, Baton, and Sherry	2	3	3	100	1	50	..	..	..	..	1	30	180
Collingwood ..	102	125	98	129,116	68	7,995	73	10,984	..	..	..	..	148,095
Inangahua ..	498	399	3,607	162,158	544	52,395	618	23,293	..	..	..	..	237,846
Charleston ..	109	131	484	32,094	121	10,487	299	8,947	..	..	86	380	51,908
Westport ..	243	153	1,289	17,485	190	24,577	403	17,250	..	..	..	..	59,312
Lyell	102	98	223	9,300	24	2,425	23	2,375	..	..	..	..	14,100
Murchison ..	230	172	842	4,970	69	2,200	57	3,400	..	..	..	..	10,570
Ahaura	168	332	1,435	142,807	73	17,344	75	2,709	..	..	..	..	162,860
Motueka ..	7	11	31	1,220	5	275	3	80	..	..	..	..	1,575
Takaka	7	44	45	2,250	6	100	8	160	..	..	..	..	2,510
Totals ..	1,468	1,468	8,057	501,500	1,101	117,848	1,559	69,198	..	..	87	410	688,956
WESTLAND—													
Hokitika & Kanieri	306	197	641	151,640	128	3,330	312	3,140	..	..	..	..	158,110
Ross	143	115	550	59,905	160	1,500	76	2,050	..	..	6	700	64,155
Kumara ..	192	108	455	3,153	192	6,400	68	4,650	11	7,000	30	600	21,803
Greymouth ..	481	429	1,930	15,245	811	19,083	1,021	13,766	..	..	..	..	48,094
Okarito	5	8	56	4,350	..	..	2	70	..	..	..	..	4,420
Stafford.. ..	207	302	450	80,000	206	10,000	306	5,300	10	2,000	2	4,100	51,400
Totals ..	1,334	1,159	4,082	264,293	1,499	40,313	1,785	28,976	21	9,000	38	5,400	347,982
OTAGO AND SOUTHLAND—													
Hindon	50	50	200	10,000	10	140	6	702	..	..	10	62	10,904
Tuapeka ..	325	910	1,835	17,700	435	9,500	313	7,200	..	..	..	..	34,400
Tapanui ..	1	2	4	100	..	..	..	..	..	..	..	..	100
Clyde, Alexandra, Black's, and Roxburgh	642	1,599	2,751	95,650	393	19,200	168	20,000	2	7,500	..	..	142,350
Arrow	98	172	192	18,969	129	4,693	23	1,395	..	..	..	..	20,057
Cromwell ..	564	1,450	2,236	103,765	308	14,648	237	11,130	..	..	..	..	129,543
Waikaia ..	220	440	900	40,000	200	2,000	121	2,500	..	..	20	800	45,300
Riverton and Orepuki	128	206	864	38,750	53	4,435	43	1,035	2	..	..	..	44,220
Queenstown ..	145	233	824	61,575	160	9,950	45	1,945	..	..	..	..	73,470
Naseby .. .. Kyeburn & Clarke's Hamilton's and Sowburn Hyde & Fullerton's Macrae's, Strath Taieri, and Shag Valley Serpentine .. St. Bathan's and Ida Valley	601	1,285	2,778	36,800	653	16,470	295	13,500	..	..	..	..	66,770
Wyndham ..	15	17	92	4,830	..	..	..	..	..	..	..	..	4,830
Gore	9	26	50	950	2	2,500	3	50	..	..	..	..	3,500
Totals ..	2,808	6,390	12,726	424,089	2,343	83,536	1,254	59,457	4	7,500	30	862	575,444

SUMMARY.

Auckland	43	41	298	82,850	10	1,410	77	4,110	2	5,000	..	..	93,370
Marlborough ..	35	28	134	3,974	9	190	7	50	1	25	..	..	4,239
Nelson	1,468	1,468	8,057	501,500	1,101	117,848	1,559	69,198	..	..	87	410	688,956
Westland	1,334	1,159	4,082	264,293	1,499	40,313	1,785	28,976	21	9,000	38	5,400	347,982
Otago	2,808	6,390	12,726	424,089	2,343	83,536	1,254	59,457	4	7,500	30	862	575,444
Totals ..	5,688	9,086	25,297	1,276,706	4,962	243,297	4,682	161,791	28	21,525	155	6,672	1,709,991

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No. 15.

RETURN of CASES in the WARDENS' COURTS, and COSTS AWARDED, for the Year ending 31st December, 1902.

District.	Number of Mining Disputes adjudicated on.	Aggregate Amount of Value.		Amount of Costs awarded.	Cases wherein Judgment has decreed Specific Performance.
		Claimed.	Recovered.		
AUCKLAND—		£ s. d.	£ s. d.	£ s. d.	
Coromandel	4	..	..	35 0 0	4
Thames	48	2,606 16 1	905 3 5	9 6 0	..
Te Aroha	..	..	..	..	7
Paeroa	16	127 0 2	82 14 1	33 6 0	..
Waihi	14	595 12 8	212 5 9	9 18 0	3
MARLBOROUGH	13	84 15 0	51 15 0	4 13 0	1
NELSON—					
Inangahua	5	2,592 10 0	2,492 10 0	56 19 0	3
Collingwood	5	1,715 1 6	7 13 6	81 15 6	5
Lyell and Murchison	18	446 8 7	53 8 1	34 2 0	..
Westport	25	571 7 7	167 18 0	23 8 6	..
Charleston	..	..	..	..	..
Takaka	..	..	..	..	..
Wangapeka	..	9 17 6	9 17 6	0 10 0	..
WESTLAND—					
Kumara	26	476 7 8	252 2 8	2 10 0	..
Greymouth	34	800 8 8	711 8 8	5 7 0	23
Hokitika and Kanieri	10	187 16 0	27 6 0	13 6 0	1
Stafford	6	6 18 0	6 1 8	3 2 2	85
Ross	..	..	..	..	..
Ahaura	14	182 16 7	82 7 6	36 3 0	1
Okarito	7	51 0 0	51 0 0	1 3 0	3
CANTERBURY—					
Ashburton	..	..	..	..	..
OTAGO AND SOUTHLAND—					
Tapanui	..	..	..	..	..
Hindon	..	..	..	..	..
Tuapeka	18	18 11 3	18 11 3	21 15 0	..
Cromwell	52	1,102 16 7	345 16 3	56 14 6	..
Roxburgh	18	410 15 4	322 11 0	32 6 0	10
Black's					
Clyde and Alexandra ..					
Waikaia	16	150 0 0	10 0 0	5 0 0	..
Orepuki, Longwood, and Riverton ..	14	..	..	..	..
Arrow (Wakatipu Goldfield) ..	43	434 7 7	414 7 7	30 3 0	30
Queenstown	33	141 0 0	103 6 8	26 4 0	22
Gore	13	254 6 6	140 7 2	17 6 10	2
Mount Ida	21	586 14 0	57 2 3	3 6 0	1
Wyndham	..	76 7 6	44 15 0	1 14 0	..
Totals	473	13,629 14 4	6,570 9 0	544 18 6	201

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No. 16.

Return of the Number of Mining Leases or Licenses in Force on the 31st December, 1902, the Extent of Ground leased or held under License, and Rental per Annum.

Mining Leases.

District.	No.	Gross Acreage.	Rental per Annum.
		A. R. P.	£ s. d.
Auckland—			
Coromandel	91	2,117 0 0	423 0 0
Thames	142	7,213 2 3	1,636 1 6
Te Aroha	19	1,070 1 14	391 9 0
Paeroa	73	4,450 0 20	1,147 7 6
Tauranga	..	..	..
Waihi	54	4,238 3 0	1,191 10 0
Marlborough—			
Havelock	8	355 2 29	66 0 6
Blenheim	30	1,463 3 33	400 7 6
Nelson—			
Collingwood	6	938 3 4	54 15 0
Inangahua	111	6,178 0 1	1,570 16 6
Charleston	33	878 2 12	114 4 6
Ahaura	180	9,129 2 0	1,763 16 6
Lyell	42	1,029 0 0	217 10 0
Murchison	50	928 0 0	198 12 6
Westport	62	3,014 3 2	884 12 0
Motueka	1	30 0 0	11 5 0
Westland—			
Hokitika and Kanieri	89	3,661 0 0	749 11 6
Kumara	66	1,312 3 20	316 5 0
Greymouth	97	3,408 0 0	549 7 0
Ross	41	2,334 0 0	543 7 6
Okarito	15	766 0 0	124 1 6
Otago and Southland—			
Cromwell	19	436 0 0	105 17 0
Hindon	8	178 0 0	68 5 0
Black's			
Clyde and Alexandra	138	7,820 0 0	1,900 15 0
Roxburgh			
Naseby	131	1,729 0 10	506 5 0
Arrow (Wakatipu Goldfield) ..	581	2,782 2 11	304 2 6
Queenstown	555	3,364 2 2	400 10 0
Riverton and Orepuki	33	2,189 0 0	109 9 0
Totals	2,675	73,017 0 1	15,749 4 0

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STATEMENT of AFFAIRS of MINING COMPANIES, as published in accordance with the Mining Companies Acts, 1891, 1894, and 1900

Name of Company.	Date of Registration.	Subscribed Capital.	Amount of Capital actually paid up.	Value of Scrip given to Shareholders on which no Cash paid.	Number of Shares allotted.	Amount paid up per Share.	Arrears of Calls.	Number of Shareholders at present.	Number of Men employed.	Quantity and Value of Gold or Silver produced since Registration.		Total Expenditure since Registration.	Total Amount of Dividends paid.	Amount of Debts owing by Company.
										Quantity.	Value.			
AUCKLAND DISTRICT.														
		£	£	£		£ s. d.	£ s. d.			Oz.	£	£	£	£
Big Beetle Gold-mining Co. (No Liability) ..	31/7/01	5,000	1,285	250	100,000	0 0 3½	124 12 1	74	5	96	289	1,014	..	26
Broken Hill Gold mining Co. (Ltd.)	16/1/95	13,500	3,469	..	90,000	0 0 9½	36 15 3	108	..	..	..	3,892	..	70
Bunker's Hill Gold-mining Co. (Ltd.)	21/6/95	18,000	11,000	6,000	80,000	5/ & 3/	6 12 3	283	16	2,846	8,663	18,149	..	375
Chelmsford Gold-mining Co. (Ltd.)	28/9/99	8,000	5,715	1,000	80,000	2/ & 1/9	409 13 2	105	31	2,173	3,972	10,397	..	1,203
Coromandel Freehold Proprietary Gold-mining Co. (No Liability)	11/11/95	18,750	10,313	..	150,000	0 0 0½	..	172	..	..	..	11,326	..	54
Eclipse (Ltd.)	19/11/98	7,500	6,750	750	150,000	0 1 0	..	11	6	..	15,393	22,516	625	135
Golden Belt Gold-mining Co. (Ltd.)	12/8/02	8,080	1,080	4,000	80,800	1/3 & 2/	108 6 8	25	12	..	..	977	..	15
Hauraki Freeholds (Ltd.)	25/1/99	18,300	..	..	366,000	..	..	332	..	..	42	..	..	Nil.
Hauraki No. 2 Gold-mining Co. (No Liability) ..	10/7/95	12,000	7,151	1,818	80,000	0 2 5	..	20	2	..	27	7,323	..	2
Kapowai Gold-mining Co. (No Liability) ..	19/6/00	5,000	3,528	250	100,000	0 0 11	..	31	4	225	524	4,218	..	7
Klondyke Gold-mining Co. (No Liability) ..	21/10/02	7,500	413	91	30,000	0 3 3	..	26	6	..	..	386	..	218
Komata Bonanza Gold-mining Co. (Ltd.) ..	1/2/02	4,150	755	..	41,502	..	152 14 9	144	5	..	..	827	..	60
Komata Reefs Gold-mining Co. (Ltd.)	16/10/00	100,000	..	..	400,000	0 5 0	..	285	83	50,481	38,217	19,800	..	1,591
Kuranui Gold-mining Co. (Ltd.)	12/9/95	15,000	5,275	..	56,850	0 1 10	74 7 6	69	7	..	732	6,004	..	241
Maratoto Gold-mining Co. (Ltd.)	17/11/00	5,000	3,750	..	100,000	0 0 9	66 8 2	121	6	..	..	3,832	..	90
May Queen Extended Gold-mining Co. (No Liability	12/11/95	15,000	5,952	..	95,000	0 1 5⅝	362 10 0	92	6	..	557	6,596	..	292
New Alpha Gold-mining Co. (No Liability) ..	4/4/01	4,745	2,537	591	94,905	0 0 10½	172 11 5	39	1	..	..	1,660	..	1,422
New Four-in-hand Gold-mining Co. (Ltd.) ..	30/6/98	22,500	22,500	..	90,000	0 5 0	..	150	10	5,307	15,464	14,641	4,500	160
New Whau Gold-mining Co. (No Liability) ..	30/3/95	18,750	6,559	1,464	125,000	1/4¾ & 1/5¼	84 18 4	78	2	167	440	7,404	..	48
Pride of Waihi Gold-mining Co. (Ltd.) ..	15/1/01	50,000	1,250	1,250	100,000	0 0 6	..	160	..	..	..	938	..	27
Puru Consolidated Gold-mining Co. (Ltd.) ..	17/7/97	24,563	9,634	7,915	65,500	0 5 5	1,010 3 9	134	4	..	1,090	10,276	..	39
Rising Sun Gold-mining Co. (No Liability) ..	16/10/95	18,000	..	1,900	89,484	0 1 1 3/10	..	58	4	..	..	3,957	..	11
Tairua Broken Hills Gold-mining Co. (Ltd.) ..	12/7/99	14,500	14,500	..	145,000	0 2 0	..	144	50	14,146	26,868	26,787	8,948	424
Taniwha Gold-mining Co. (Ltd.) ..	12/9/01	4,100	1,737	..	41,000	0 1 1	484 1 10	57	12	145	346	2,819	..	934
Thames Talisman Gold-mining Co. (Ltd.) ..	28/6/00	2,900	1,415	..	58,000	0 0 7	276 9 2	27	4	..	..	1,981	..	94
Victoria Gold-mining Co. (No Liability) ..	2/9/90	25,600	15,590	1,600	128,000	0 3 2⅜	360 14 7	142	8	..	12,524	26,263	..	Nil.
Waihi Beach United Gold-mining Co. (No Liability)	12/10/98	6,375	1,060	3,187	127,500	0 0 6	..	140	..	..	..	2,811	..	4
Waihi Consolidated (Ltd.)	23/3/00	25,000	1,042	15,000	100,000	0 3 2½	..	141	1	..	..	1,369	..	65
Waihi Consols Gold-mining Co. (No Liability) ..	18/10/95	16,200	10,355	50	162,000	0 0 0½	..	..	..	..	..	10,529	..	46
Waihi Extended Gold-mining Co. (Ltd.) ..	12/8/95	149,967	12,905	5,498	149,967	0 2 7½	1,279 8 1	431	14	..	..	13,240	..	175
Waihi South Gold-mining Co. (Ltd.)	13/6/95	19,800	10,801	7,350	132,000	0 2 10	549 3 4	203	6	..	..	12,252	..	60
Waihui Gold-mining Co. (No Liability) ..	7/12/00	2,250	949	208	60,000	0 0 4	157 16 1	52	2	..	..	801	..	7
Waiotahi Gold-mining Co. (Ltd.)	1/8/71	18,000	15,000	..	6,000	2 10 0	..	47	17	66,715	185,858	150,950	39,300	57
Welcome Jack Gold-mining Co. (Ltd.)	9/8/00	5,000	2,438	500	100,000	0 0 6½	..	73	8	..	2,059	5,314	..	12
Totals	..	689,030	196,711	60,672	3,774,508	..	5,717 6 5	3,977	332	142,301	313,065	411,249	53,373	7,964

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STATEMENT of AFFAIRS of MINING COMPANIES, as published in accordance with the Mining Companies Acts, 1891, 1894, and 1900—*continued*.

Name of Company.	Date of Registration.	Subscribed Capital.	Amount of Capital actually paid up.	Value of Scrip given to Shareholders on which no Cash paid.	Number of Shares allotted.	Amount paid up per Share.	Arrears of Calls.	Number of Shareholders at present.	Number of Men employed.	Quantity and Value of Gold or Silver produced since Registration.		Total Expenditure since Registration.	Total Amount of Dividends paid.	Amount of Debts owing by Company.
										Quantity.	Value.			
NELSON DISTRICT (INCLUDING WEST COAST)														
		£	£	£		£ s. d.	£ s. d.			Oz.	£	£	£	£
A1 Gold-dredging Co. (Ltd.)	13/11/99	8,500	6,700	..	8,500	1 0 0	..	127	7	1,876	7,421	13,985	1,275	Nil.
Addison's Long Tunnel Gold-mining Co. (Ltd.)	24/9/98	1,330	1,125	83	1,500	Various	40 11 0	24	..	1,028	4,057	5,108	177	317
Aldinga Gold-dredging Co. (Ltd.)	23/5/00	6,750	6,750	2,250	9,000	1 0 0	..	191	9	310	1,179	10,176	..	2,496
Alpine Extended Gold-mining Co. (Ltd.)	25/8/97	25,000	5,417	..	50,000	0 2 2	..	175	28	9,407	36,379	43,656	..	466
Amikitea Gold-dredging Co. (Ltd)	20/8/01	12,500	6,677	2,500	12,500	0 16 0	1,323 0 0	103	9	51	199	9,246	..	2,659
Aorere River Gold-dredging Co. (Ltd.)	8/3/01	8,915	6,424	2,000	8,915	Various	491 6 0	166	5	..	..	6,067	..	600
Atlas Prospecting and Gold-mining Co. (Ltd.)	4/8/02	21,000	223	..	21,000	0 0 3	39 11 8	18	3	..	..	243	..	50
Bignell's No Town Gold-dredging Co. (Ltd.)	10/4/00	8,000	3,506	3,000	11,100	1 0 0	4,494 1 0	175	..	..	..	3,203	..	22
Big River Gold-mining Co. (Ltd.)	11/4/91	12,000	7,065	..	24,000	0 6 0	435 1 0	72	8	23,620	94,936	58,955	46,200	88
Blackwater River Gold-dredging Co. (Ltd.)	27/4/00	6,475	5,423	3,000	9,475	Various	404 10 0	122	1	..	..	5,482	..	25
Boatman's Creek Gold-dredging Co. (Ltd.)	28/8/02	10,120	3,423	4,000	10,120	Various	1,167 4 3	60	..	..	..	2,937	..	80
Britannia Gold-mining Co. (Ltd.)	3/3/99	10,000	1,713	..	20,000	0 6 11½	48 14 6	17	..	1,345	5,263	4,693	2,258	96
Buller Junction Gold-dredging Co. (Ltd.)	8/6/99	8,125	8,125	1,250	12,500	0 15 0	..	126	9	2,375	9,246	15,414	988	119
Callaghan's Creek Gold-dredging Co. (Ltd.)	25/5/00	7,500	5,750	1,875	12,500	0 11 6	..	75	7	765	3,048	8,307	318	35
Claughesy's Freehold Gold-dredging Co. (Ltd.)	26/4/00	7,100	2,090	1,600	8,700	Various	2,170 0 0	116	..	..	..	1,792	..	14
Commissioners' Flat Gold-dredging Co. (Ltd.)	3/4/00	13,500	8,990	3,000	13,500	1 0 0	..	83	8	156	623	12,163	..	1,587
Cornwall Gold-dredging Co. (Ltd.)	18/6/00	9,800	9,765	1,200	11,000	1 0 0	..	108	8	901	2,554	11,529	..	577
Craig's Freehold Gold-dredging Co. (Ltd.)	20/8/00	6,500	3,414	2,500	9,000	0 12 0	480 12 0	116	16	744	2,980	3,880	..	2,625
Daylight Gold-dredging Co. (Ltd.)	15/5/00	6,000	4,243	2,000	8,000	1 0 0	171 10 0	66	..	..	..	4,321	..	115
Erickson's Reward Gold dredging Co. (Ltd.)	24/10/99	7,255	7,201	2,000	9,255	1 0 0	54 2 6	191	8	1,285	5,163	14,050	..	977
Feddersen Gold-dredging Co. (Ltd.)	5/3/01	11,000	8,840	2,000	11,000	Various	114 15 0	78	7	..	..	10,728	..	367
Garden Gully Gold-mining Co. (Ltd.)	8/8/01	965	894	8,000	8,965	Various	71 10 0	52	2	..	..	871	..	55
Glenroy Gold-dredging Co. (Ltd.)	4/7/02	2,200	443	850	3,050	0 6 0	247 10 0	18	1	..	..	328	..	592
Golden Lead Gold-mining Co. (Ltd.)	3/5/02	6,000	284	..	24,000	0 0 3	16 0 0	23	2	..	..	415	..	169
Golden United Dredging Co. (Ltd.)	7/4/00	6,500	5,182	..	6,500	1 0 0	1,318 4 6	97	1	..	..	2,600	..	2,000
Great Lead Gold-dredging Co. (Ltd.)	11/9/99	7,500	5,390	..	5,500	Various	15 0 0	100	1	5	20	7,363	..	2,729
Greenstone Creek Gold-dredging Co. (Ltd)	10/10/99	9,000	8,976	2,000	10,976	1 0 0	..	160	7	885	3,486	12,595	..	298
Greenstone Junction Gold-dredging Co. (Ltd.	22/9/99	7,500	7,500	1,500	12,000	0 15 0	..	135	9	2,076	8,050	15,258	..	156
Greenstone Sluicing Co. (Ltd.)	22/1/89	7,000	2,703	2,300	7,000	0 11 6	..	29	..	4,036	15,868	19,011	1,925	Nil.
Grey River Dredging Co. (Ltd.)	10/3/99	6,500	6,500	2,000	8,500	1 0 0	..	197	1	1,357	5,160	11,111	1,063	383
Grey River No. 2 Gold-dredging Co. (Ltd.)	9/5/00	7,500	602	2,500	10,000	0 2 0	148 7 0	120	..	..	..	499	..	Nil.
Grey River Consols Gold-dredging Co. (Ltd.)	18/1/01	10,000	428	2,500	10,000	0 2 0	321 15 0	60	..	..	..	417	..	155
Hokitika River Gold-dredging Co. (Ltd.)	31/8/99	13,000	9,927	3,000	13,000	1 0 0	72 11 0	252	7	1,042	4,061	14,807	..	816
Industry Gold-mining Co. (Ltd.)	31/5/02	12,000	580	..	24,000	0 0 7	95 14 7	68	2	29	88	700	..	78
Kaituna River Gold-dredging Co. (Ltd.)	10/4/01	8,077	5,608	2,000	8,077	Various	426 2 6	108	8	191	705	7,175	..	1,500
Karamea Gold-dredging Co. (Ltd.)	25/7/02	2,574	1,222	..	2,574	0 14 0	579 8 0	47	..	..	..	1,089	..	654
Keep-it-Dark Quartz mining Co. (Ltd.)	2/8/74	20,000	6,208	10,000	20,000	0 6 2½	..	54	51	83,001	319,933	347,464	123,417	66
Kello Sluicing Co. (Ltd.)	7/4/02	1,475	1,438	1,250	2,725	1 0 0	37 10 0	17	8	..	..	1,597	..	180
Kirwan's Reward Gold-mining Co. (Ltd.)	8/3/98	56,000	3,092	..	56,000	0 1 1½	..	85	30	6,711	26,905	17,418	11,900	500
Kohikohi Gold-dredging Co. (Ltd.)	27/5/00	12,000	9,500	2,500	12,000	1 0 0	..	114	13	844	2,999	14,278	..	2,034
Kohinoor Gold-dredging Co. (Ltd.)	15/2/00	15,000	12,484	2,500	15,000	1 0 0	16 0 0	165	8	744	2,920	15,343	..	1,300
Leviathan Gold-dredging Co. (Ltd.)	3/10/99	12,000	12,000	3,000	24,000	20/ & 5/	..	359	8	2,159	8,386	19,299	1,500	270
Major Robin Gold-dredging Co. (Ltd.)	25/4/00	6,750	1,513	..	6,750	0 8 0	1,187 0 0	137	..	..	..	772	..	Nil.
Maori King Gold-dredging Co. (Ltd.)	30/3/00	5,500	4,581	1,500	6,200	1 0 0	80 10 0	73	6	46	180	4,817	..	262
Minerva Gold-mining Co. (Ltd.)	24/2/90	12 000	6,670	400	17,285	0 6 8	18 8 4	18	1	821	2,947	11,001	..	77

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STATEMENT of AFFAIRS of MINING COMPANIES, as published in accordance with the Mining Companies Acts, 1891, 1894, and 1900—*continued.*

Name of Company.	Date of Registration.	Subscribed Capital.	Amount of Capital actually paid up.	Value of Scrip given to Shareholders on which no Cash paid.	Number of Shares allotted.	Amount paid up per Share.	Arrears of Calls.	Number of Shareholders at present.	Number of Men employed.	Quantity and Value of Gold or Silver produced since Registration.		Total Expenditure since Registration.	Total Amount of Dividends paid.	Amount of Debts owing by Company.
										Quantity.	Value.			
NELSON DISTRICT (INCLUDING WEST COAST)—*continued.*														
		£	£	£		£ s. d.	£ s. d.			Oz.	£	£	£	£
Mokoia Gold-dredging Co. (Ltd.)	21/4/99	9,000	7,750	1,250	9,000	1 0 0	..	222	8	2,174	8,052	15,410	..	311
Mont d'Or Gold-mining and Water-race Co. (Ltd.)	25/7/82	12,000	10,800	..	12,000	0 18 0	..	28	18	26,898	102,798	78,219	37,800	1,500
Montgomery's Terrace Hydraulic Sluicing Co. (Ltd.)	28/9/00	17,500	11,382	5,500	22,900	1 0 0	337 17 6	147	1	33	127	12,686	..	70
Moonlight Gold-dredging Co. (Ltd.)	7/5/00	7,750	7,083	1,250	8,823	20/ & 10/	353 14 8	117	..	..	..	6,623	..	121
Mosquito Gold dredging Co. (Ltd.)	24/4/00	10,000	7,800	2,200	10,000	1 0 0	..	95	9	1,381	5,368	12,912	..	155
Mosquito No. 2 Gold dredging Co. (Ltd.) ..	24/4/01	8,000	4,000	3,000	11,000	0 10 0	..	11	3	..	..	4,350	..	350
Mount Paparoa Gold mining Co. (No Liability)	3/2/02	8,414	2,103	21,587	60,000	0 2 6	..	183	9	..	..	1,783	..	617
Nelson Creek Gold-dredging Co. (Ltd.) ..	1/7/99	6,000	6,000	2,500	8,500	1 0 0	..	86	9	6,086	23,858	27,863	12,325	681
Neville and Perkins Hydraulic Sluicing Co. (Ltd.)	6/2/01	10,000	6,250	3,750	10,000	1 0 0	..	..	..	115	470	10,771	..	Nil.
New Greenstone Gold-dredging Co. (Ltd.) ..	12/12/01	2,953	2,970	5,906	8,906	1 0 0	..	107	8	14	55	3,824	..	862
New Scotia Gold-mining Co. (Ltd.)	10/4/00	12,000	4,786	3,000	24,000	0 5 6	313 15 0	78	11	1,124	3,533	8,510	..	323
Nine-mile Creek Sluicing Co. (Ltd.)	27/9/01	2,755	2,425	2,000	4,755	21/ & 10/	202 15 0	78	4	8	30	2,637	..	313
North Beach Gold-dredging Co. (Ltd)	27/2/00	6,225	6,225	2,100	8,325	1 0 0	..	105	8	1,770	6,865	13,501	416	303
No Town Creek Gold-dredging Co. (Ltd.) ..	9/3/00	8,500	8,500	3,500	12,000	1 0 0	..	128	9	1,971	7,686	15,049	2,378	283
Pactolus Gold-dredging Co. (Ltd.)	31/8/99	8,125	8,125	1,250	12,500	0 15 0	..	144	19	3,686	14,547	22,849	..	852
Parapara Flat Gold-dredging Co. (Ltd.) ..	26/7/01	6,205	3,911	2,000	6,205	1 0 0	294 4 0	103	1	4	15	3,927	..	400
Piano Flat Hydraulic Gold-mining Co. (Ltd.) ..	20/12/98	3,725	2,641	1,000	3,725	1 0 0	88 15 0	28	5	..	152	5,248	..	2,537
Premier (Buller) Gold-dredging Co. (Ltd.) ..	9/3/00	10,585	8,122	1,500	10,585	Various	60 1 0	141	8	843	3,316	10,953	262	543
Prince of Wales Dredging Co. (Ltd.)	17/10/99	10,000	9,882	4,000	14,000	1 0 0	118 0 0	89	8	367	1,429	11,772	..	815
Red Jack's Gold-dredging Co. (Ltd.)	26/4/00	10,500	8,729	1,700	10,500	1 0 0	70 15 0	147	9	1,008	3,908	14,014	..	202
Red Queen Gold-mining Co. (Ltd.)	25/4/02	1,786	1,149	200	10,000	Various	23 5 0	32	..	15	57	1,200	..	190
Reeves's Proprietary Gold dredging Co. (Ltd.) ..	19/10/99	12,200	9,200	2,500	12,200	1 0 0	..	238	8	1,763	7,026	17,475	610	Nil.
Rocklands Beach Gold-dredging Co. (Ltd.) ..	1/9/99	11,672	9,872	1,800	11,672	1 0 0	..	125	8	913	3,584	13,649	..	589
Rocklands King Gold-dredging Co. (Ltd.) ..	—/8/00	11,000	3,135	8,000	11,000	0 0 4½	11 13 7	15	..	..	..	133	..	Nil.
Shetland Terrace Sluicing Co. (Ltd.)	18/6/01	6,125	5,658	2,050	6,425	1 0 0	230 0 0	64	..	..	..	3,249	..	112
Slate River Sluicing Co. (Ltd.)	26/7/00	14,680	14,522	1,200	13,480	Various	158 6 0	85	7	306	1,186	12,990	..	Nil.
Snowy Creek United Gold-mining Co. (Ltd.) ..	17/12/98	12,000	3,178	6,565	48,000	4/8 & 1/3	34 17 6	25	2	50	184	2,821	..	60
Stafford-Waimea Gold-dredging Co. (Ltd.) ..	14/5/00	7,000	5,460	2,000	9,000	0 16 0	103 0 0	78	7	630	2,544	7,294	..	358
Sullivan's Lead Gold-dredging Co. (Ltd.) ..	8/5/00	10,000	7,301	2,000	12,000	1 0 0	1,142 18 9	138	1	46	180	7,058	..	28
Taffy Gold-mining Co. (Ltd.)	27/1/99	7,000	1,466	..	28,000	0 1 1	23 6 8	36	3	420	1,690	3,465	..	97
Takaka Sluicing Co. (Ltd.)	28/1/01	5,895	5,392	3,725	9,120	Various	3 0 0	47	15	994	3,711	7,328	1,368	160
Three-mile (Greenstone Creek) Dredging Co. (Ltd.)	15/9/99	6,500	6,500	1,500	8,000	1 0 0	..	104	9	1,388	5,398	11,957	..	97
Trafalgar Gold-dredging Co. (Ltd.)	16/2/00	6,750	6,750	2,250	9,000	1 0 0	..	179	8	891	1,521	9,998	..	1,743
Victory Gold-dredging Co. (Ltd.)	14/5/00	7,050	7,050	1,950	9,000	1 0 0	..	213	8	343	1,319	9,952	..	1,862
Waiwhero Sluicing and Dredging Co. (Ltd.) ..	9/2/00	31,000	12,627	17,668	31,000	1 0 0	710 12 9	79	15	2,250	8,998	19,370	..	1,535
Wanganui-Wataroa Gold-dredging Co. (Ltd.) ..	22/6/01	6,925	..	..	6,925	1 0 0	1,274 0 0	131	..	..	..	4,000	..	1,465
Wangapeka Gold-dredging Co. (Ltd.)	19/9/00	15,000	7,670	6,000	21,000	0 11 0	580 5 0	220	3	12	45	8,513	..	305
Watterson's-Ahaura Dredging Co. (Ltd.) ..	18/8/02	2,924	2,317	..	2,924	0 17 6	231 11 6	152	8	116	447	2,293	..	510
Welcome Gold-dredging Co. (Ltd.)	3/5/00	9,900	9,747	2,750	9,900	1 0 0	..	121	8	1,052	4,149	13,513	..	428
Westland Water-supply, Electric Power, and Gold-dredging Co. (Ltd.)	8/10/00	3,885	2,997	12,000	15,571	0 16 0	73 14 0	31	1	..	..	3,924	..	154
Woodstock Gold-dredging Co. (Ltd.)	22/2/00	12,000	8,958	..	12,000	1 0 0	42 10 0	95	2	65	250	9,757	..	2,152
Totals	..	825,393	487,022	220,204	1,159,508	..	22,564 2 4	8,932	559	206,046	799,244	1,224,928	246,125	50,662

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STATEMENT of AFFAIRS of MINING COMPANIES, as published in accordance with the Mining Companies Acts, 1891, 1894, and 1900—*continued.*

Name of Company.	Date of Registration.	Subscribed Capital.	Amount of Capital actually paid up.	Value of Scrip given to Shareholders on which no Cash paid.	Number of Shares allotted.	Amount paid up per Share.	Arrears of Calls.	Number of Shareholders at present.	Number of Men employed.	Quantity and Value of Gold or Silver produced since Registration.		Total Expenditure since Registration.	Total Amount of Dividends paid.	Amount of Debts owing by Company.
										Quantity.	Value.			
OTAGO DISTRICT (INCLUDING SOUTHLAND).														
		£	£	£		£ s. d.	£ s. d.			Oz.		£	£	£
Alexandra Bonanza Gold-dredging and Sluicing Co. (Ltd.)	5/9/99	27,000	14,374	3,000	21,393	0 17 0	663 16 0	141	10	..	678	17,055	..	408
Alexandra Eureka Gold-dredging Co. (Ltd.) ..	14/11/99	12,000	..	12,000	12,000	1 0 0	..	11	8	3,801	14,674	8,406	5,700	49
Alexandra Lead Gold-dredging Co. (Ltd.) ..	26/7/99	17,521	14,521	3,000	17,521	1 0 0	..	216	9	4,977	19,270	17,570	13,158	806
Alpine No. 2 Gold-dredging Co. (Ltd.)	1/5/99	6,220	6,220	825	6,220	1 0 0	..	132	8	1,769	6,839	9,418	1,861	20
Arrow Falls Gold-mining Co. (Ltd.)	4/4/98	30,000	2,125	27,750	30,000	1 0 0	..	33	..	742	2,870	5,918	..	144
Bakery Flat Sluicing Co. (Ltd.)	10/9/96	2,500	1,888	300	2,500	0 17 6	..	28	9	2,287	8,647	9,666	1,068	200
Blue Spur and Gabriel's Gully Consolidated Gold Co. (Ltd.)	1/2/88	91,266	37,622	60,000	91,266	1 0 0	..	..	35	38,950	153,007	23,372	28,721	900
Bonanza Gold-dredging Co. (Ltd.)	20/2/00	6,350	786	..	6,350	Various	325 1 6	127	..	..	..	578	..	4
Cairntrodlie Gold-dredging Co. (Ltd.)	27/3/00	4,000	1,579	2,000	6,000	0 11 0	630 15 0	61	..	82	346	2,558	..	738
Central Charlton Dredging Co. (Ltd.)	8/12/99	5,300	5,300	1,700	7,000	1 0 0	..	128	8	1,565	6,111	12,236	..	806
Central Mataura Gold-dredging Co. (Ltd.) ..	30/6/00	27,000	7,774	7,000	27,000	Various	17 10 0	225	9	1,416	5,261	18,403	..	2,807
Champion Gold-mining Co. (Ltd.)	30/12/98	10,000	4,360	..	10,000	10/ & 8/	..	65	15	1,726	6,639	11,090	500	986
Charlton Creek Gold-dredging Co. (Ltd.) ..	5/5/99	4,000	4,000	1,000	5,000	1 0 0	..	79	7	3,114	12,086	15,742	3,465	219
Charlton Valley Gold-dredging Co. (Ltd.) ..	7/4/00	5,000	4,125	1,000	6,000	1 0 0	..	130	9	425	1,745	7,613	..	2,682
Chicago Gold-dredging Co. (Ltd.)	1/11/99	2,500	6,750	2,500	5,000	2 10 0	..	78	7	2,700	10,550	7,995	2,621	69
Clyde Dredging Co. (Ltd.)	17/5/95	6,000	6,000	150	6,000	1 0 0	..	82	8	10,322	39,776	18,817	19,100	112
Coal Creek Flat Dredging Co. (Ltd.)	18/9/99	9,000	6,987	2,000	9,000	1 0 0	13 10 0	181	7	756	2,910	15,083	..	151
Coronation Gold-dredging Co. (Ltd.)	7/9/02	2,500	1,953	100	2,600	0 16 0	47 0 0	22	9	..	..	1,725	..	187
Crewe Gold-dredging Co (Ltd.)	7/9/02	2,000	500	3,000	5,000	0 5 0	..	15	7	257	991	952	..	99
Cromwell Gold-dredging Co. (Ltd.)	10/10/98	5,300	5,300	1,700	7,000	1 0 0	..	146	8	6,472	25,045	17,439	13,125	839
Cromwell Proprietary Gold-mining Co. (Ltd.) ..	22/12/97	100,000	2,537	..	100,000	1 0 0	..	24	..	4,826	18,445	6,203	..	289
Davis Bend Dredging Co. (Ltd.)	1/5/00	11,000	3,004	2,500	11,000	Various	..	129	7	765	2,916	5,119	..	192
Deep Stream Amalgamated Hydraulic Sluicing Co. (Ltd.)	4/2/97	8,500	8,500	3,500	12,000	1 0 0	..	57	15	4,557	17,546	26,718	5,950	197
Dunstan Lead Gold-dredging Co. (Ltd.) ..	31/5/99	17,500	14,489	3,000	17,500	1 0 0	..	209	9	1,521	5,878	20,576	..	840
Earnscleugh Gold-dredging Co. (Ltd.)	15/7/01	8	8	10,992	11,000	1 0 0	..	9	23	5,762	22,414	13,515	6,325	1,315
Electric Gold-dredging Co. (Ltd.)	2/9/99	26,000	..	26,000	26,000	1 0 0	..	271	19	16,952	66,210	16,517	49,400	1,371
Empire Gold-dredging Co. (Ltd.)	13/7/97	5,000	5,000	..	5,000	1 0 0	..	40	15	8,688	30,565	24,016	12,260	168
Endeavour Gold-dredging Co. (Ltd.)	29/8/99	10,000	8,000	2,000	10,000	1 0 0	..	205	2	988	3,813	11,962	..	250
Enfield Gold-dredging Co. (Ltd.)	31/10/99	5,000	5,000	2,000	5,000	1 0 0	..	62	7	1,491	5,756	10,388	350	528
Enterprise Gold-dredging Co. (Ltd.)	24/8/91	7,000	3,500	..	7,000	1 0 0	..	154	14	11,823	45,723	32,410	15,512	470
Ettrick Gold Steam-dredging Co. (Ltd.) ..	28/8/90	9,000	8,366	2,000	10,500	1 0 0	..	114	7	5,758	22,160	28,457	3,150	864
First Chance Gold-dredging Co. (Ltd.)	23/6/02	3,500	3,500	3,500	7,000	1 0 0	..	168	8	1,189	4,589	4,086	3,150	100
Fourteen-mile Beach Gold-dredging Co. (Ltd.) ..	25/10/98	22,000	16,605	2,600	22,000	20/ & 12/6	569 0 0	363	12	802	3,089	19,700	..	1,148
Fraser River Gold-dredging Co. (Ltd.) ..	6/9/01	150	8	..	150	0 1 0	..	7	1	..	..	10,728	..	367
Gabriel Gold-dredging Co. (Ltd.)	12/6/00	3,350	2,315	2,150	4,590	1 0 0	..	56	7	1,482	5,713	8,784	..	828
Gibbston Gold-dredging Co. (Ltd.)	19/9/99	6,400	6,349	1,600	8,000	1 0 0	150 11 0	200	1	..	..	6,320	..	1,065
Glen-iti Gold dredging Co. (Ltd.)	28/10/99	3,939	2,411	2,200	5,139	20/ & 10/	71 10 0	45	..	347	1,335	4,117	..	586
Globe Gold-dredging Co. (Ltd.)	31/1/00	3,225	3,225	700	3,225	1 0 0	..	46	8	1,097	4,497	2,472	..	823
Golden Bed Dredging Co. (Ltd.)	5/5/99	11,000	10,744	2,000	12,794	1 0 0	50 1 8	212	7	1,955	7,628	10,227	..	Nil.
Golden Chain Dredging Co. (Ltd.)	26/9/99	8,000	6,897	2,000	10,000	1 0 0	1,103 10 0	146	1	9	36	8,559	..	707
Golden Crescent Sluicing Co. (Ltd.)	26/11/98	3,500	3,500	..	3,500	1 0 0	..	26	9	1,950	7,539	8,258	2,712	85

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STATEMENT of AFFAIRS of MINING COMPANIES, as published in accordance with the Mining Companies Acts, 1891, 1894, and 1900—*continued*.

Name of Company.	Date of Registration.	Subscribed Capital.	Amount of Capital actually paid up.	Value of Scrip given to Shareholders on which no Cash paid.	Number of Shares allotted.	Amount paid up per Share.	Arrears of Calls.	Number of Shareholders at present.	Number of Men employed.	Quantity and Value of Gold or Silver produced since Registration.		Total Expenditure since Registration.	Total Amount of Dividends paid.	Amount of Debts owing by Company.
										Quantity.	Value.			
OTAGO DISTRICT—*continued*.														
		£	£	£		£ s. d	£ s. d.			Oz.	£	£	£	£
Golden Gate Dredging Co. (Ltd.)	13/3/95	2,500	2,500	..	2,500	1 0 0	..	53	7	10,341	39,825	21,162	19,875	150
Golden Horseshoe Dredging Co. (Ltd.) ..	16/1/00	10,000	6,895	2,000	10,000	1 0 0	20 15 0	118	..	..	..	8,148	..	216
Golden Lion Mining Co. (Ltd.)	28/10/01	3,000	2,846	..	3,000	1 0 0	154 0 0	43	16	149	517	3,383	..	59
Golden River Gold-dredging Co. (Ltd.)	7/8/99	10,000	8,400	1,600	40,000	0 5 0	..	337	8	963	3,718	11,057	1,000	98
Golden Run Dredging Co. (Ltd.)	29/6/91	9,000	9,414	1,600	11,000	1 0 0	..	154	9	10,296	39,638	45,240	5,194	1,286
Golden Treasure Dredging Co. (Ltd.)	11/7/93	1,500	1,384	1,500	3,000	1 0 0	..	46	6	9,028	34,758	22,707	14,596	128
Grand Junction Gold-dredging Co. (Ltd.) ..	14/3/02	3,327	3,169	..	6,685	1 0 0	158 2 6	160	8	175	676	3,708	..	162
Great Central Dredging Co. (Ltd.)	24/8/99	8,000	8,000	2,000	10,000	1 0 0	..	175	..	50	190	9,390	..	599
Happy Valley Gold-dredging Co. (Ltd.) ..	24/2/00	5,050	4,647	2,450	7,500	1 0 0	28 0 0	95	7	1,139	4,282	8,720	..	1,122
Hartley and Riley Beach Dredging Co. (Ltd.) ..	14/7/97	6,500	6,300	200	6,500	1 0 0	..	344	9	20,685	80,036	21,223	62,563	123
Hessey's Gold-dredging Co. (Ltd.)	22/7/02	3,700	1,826	1,300	5,000	0 12 0	53 10 0	79	..	..	..	1,301	..	Nil.
Inchdale Gold-dredging Co. (Ltd.)	8/2/00	5,500	5,023	1,500	7,000	1 0 0	..	104	7	1,027	3,884	8,846	..	556
Inch Valley Gold-dredging Co. (Ltd.)	15/9/98	5,000	2,600	2,400	5,000	1 0 0	..	70	7	2,353	9,063	9,948	1,500	196
Island Block Gold-dredging Co. (Ltd.)	26/2/00	24,030	11,991	12,000	25,000	1 0 0	39 0 0	82	8	1,320	5,105	13,391	..	1,603
Junction Electric Gold-dredging Co. (Ltd.) ..	2/9/99	26,000	..	26,000	26,000	1 0 0	..	308	8	10,362	40,038	42,378	18,850	506
Junction Waikaka Gold-dredging Co. (Ltd.) ..	10/10/00	5,100	1,808	..	5,100	0 12 0	1,252 10 0	42	..	..	..	1,048	..	792
Jutland Hydraulic Dredging Co. (No Liability) ..	28/6/01	4,100	4,100	900	5,000	1 0 0	..	8	8	220	853	6,697	..	1,495
Kawarau Consolidated Gold-dredging Co. (Ltd.)	20/9/99	5,600	5,289	1,900	7,500	1 0 0	..	131	1	..	..	5,749	..	600
Kelly and Casey Beach Dredging Co. (Ltd.) ..	15/9/99	8,295	8,295	2,200	10,495	1 0 0	..	213	8	248	942	10,433	..	853
Lady Charlton Gold-dredging Co. (Ltd.) ..	12/2/00	11,000	9,603	2,000	13,000	0 19 6	665 15 0	275	7	398	1,582	11,055	..	503
Lady Roxburgh Gold-dredging Co. (Ltd.) ..	3/3/00	9,000	3,877	2,000	11,000	0 13 0	813 1 0	137	..	68	253	4,395	..	556
Ladysmith Gold-dredging Co. (Ltd.)	19/4/00	12,000	3,463	3,000	14,500	0 10 0	534 8 0	106	4	718	2,764	5,592	..	44
Lafranchi's Freehold Gold-dredging Co. (Ltd.)	15/3/00	8,000	6,296	4,000	12,000	1 0 0	110 0 0	160	7	384	1,489	7,864	..	1,379
Last Chance Hydraulic Sluicing, Elevating, and Dredging Co. (Ltd.)	27/7/99	9,950	4,655	3,300	9,950	0 14 0	..	103	11	938	3,650	5,087	..	Nil.
Local Industry Gold-mining Co. (Ltd.) ..	21/10/91	1,500	1,300	..	1,500	0 17 4	..	13	4	3,475	13,376	13,345	1,838	55
Lone Star Gold-dredging Co. (Ltd.)	15/3/02	720	600	..	720	0 16 8	..	15	8	418	1,610	2,182	..	135
Long Valley Gold-dredging Co. (Ltd.)	31/8/99	7,000	7,000	2,000	9,000	1 0 0	..	119	7	472	1,804	10,894	..	2,199
Lower Enfield Gold-dredging Co. (Ltd.) ..	15/3/00	6,000	5,679	1,500	7,500	1 0 0	..	111	6	67	256	6,496	..	717
MacCharlton Gold-dredging Co (Ltd)	3/12/00	6,000	2,545	1,000	7,000	Various	..	52	8	252	965	5,830	..	2,343
Majestic Gold-dredging Co. (Ltd.)	31/7/99	6,500	5,700	800	6,500	1 0 0	..	102	7	1,782	6,852	11,334	1,300	128
Maori Point Gold-dredging Co (Ltd.)	2/9/01	3,200	3,200	1,300	3,200	1 0 0	..	48	7	795	3,053	6,092	450	212
McLean's Waimumu Freehold Co. Ltd.) ..	25/9/01	7,500	3,939	3,500	7,500	1 0 0	60 17 3	89	..	51	197	883	..	83
Manuherikia Gold-dredging Co. (Ltd.)	1/8/99	6,000	6,000	6,000	12,000	1 0 0	..	171	9	5,202	19,862	16,056	7,200	233
Matau Dredging Co. (Ltd.)	16/10/97	6,200	6,200	800	7,000	1 0 0	..	124	8	6,734	25,933	17,218	12,950	197
Meg and Annie Gold-dredging Co. (Ltd.) ..	9/5/99	7,500	6,000	1,500	7,500	1 0 0	..	171	8	3,896	14,989	14,741	6,375	225
Molyneux Hydraulic Dredging Co. (Ltd.) ..	25/5/00	5,896	5,896	..	5,896	1 0 0	..	93	7	3,260	12,626	10,477	2,506	329
Molyneux Kohinoor Dredging Co. (Ltd.) ..	27/1/00	8,250	4,693	1,805	10,005	0 12 6	..	172	1	659	2,550	6,394	457	24
Monte Christo Dredging Co (Ltd.)	7/6/99	8,500	8,500	1,100	9,600	1 0 0	..	181	8	1,478	5,617	11,369	1,920	205
Mount Buster Mining Co. (Ltd.)	20/4/96	6,480	..	4,320	216	20 0 0	..	13	4	1,933	7,445	2,938	4,212	111
Muddy Creek Gold-dredging Co. (Ltd.) ..	2/11/01	1,135	1,023	725	1,860	1 0 0	111 18 7	25	9	846	3,200	4,278	..	301
Muddy Creek Sluicing Co. (Ltd.)	4/3/02	1,050	960	..	1,050	1 0 0	37 10 0	18	3	..	..	1,211	..	331
Mystery Flat Gold-dredging Co. (Ltd.) ..	16/7/00	4,512	4,512	1,000	5,512	1 0 0	..	112	7	1,305	5,091	8,392	827	Nil.

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STATEMENT of AFFAIRS of MINING COMPANIES, as published in accordance with the Mining Companies Acts, 1891, 1894, and 1900—*continued*.

Name of Company.	Date of Registration.	Subscribed Capital.	Amount of Capital actually paid up.	Value of Scrip given to Shareholders on which no Cash paid.	Number of Shares allotted.	Amount paid up per Share.	Arrears of Calls.	Number of Shareholders at present.	Number of Men employed.	Quantity and Value of Gold or Silver produced since Registration.		Total Expenditure since Registration.	Total Amount of Dividends paid.	Amount of Debts owing by Company.
										Quantity.	Value.			
OTAGO DISTRICT—*continued*.														
		£	£	£		£ s. d.	£ s. d.			Oz.	£	£	£	£
Naseby Dredging and Hydraulic Sluicing Co. (Limited)	16/10/97	5,000	2,288	2,000	5,000	0 15 3	..	24	6	2,721	10,520	12,360	2,250	170
New Alpine Consols Dredging Co. (Ltd.) ..	3/7/02	3,098	3,098	..	6,195	0 10 0	..	94	8	556	2,157	4,038	927	30
New Britannia Gold-dredging Co. (Ltd.) ..	4/8/02	1,566	1,013	..	1,566	0 17 6	357 12 6	69	7	90	113	1,104	..	582
New Golden Gravel Gold-dredging Co. (Ltd.) ..	6/6/02	1,460	1,460	..	1,460	1 0 0	..	56	8	503	1,935	2,597	440	Nil.
New Half-way House Gold-dredging Co. (Ltd.) ..	25/11/01	4,000	3,980	..	8,000	1 0 0	20 0 0	175	1	177	671	1,499	..	20
New Leaning Rock Gold-dredging Co. (Ltd.) ..	11/7/02	1,500	1,000	..	1,500	1 0 0	500 0 0	124	1	13	52	1,047	..	333
New Nevis Gold-dredging Co. (Ltd.)	27/11/02	1,579	1,579	1,579	3,158	1 0 0	..	48	6	239	919	2,692	..	196
New Paul's Beach Dredging Co. (Ltd.) ..	14/11/02	900	900	100	1,000	1 0 0	..	13	6	139	526	1,164	..	76
New River Molyneux Gold-dredging Co. (Ltd.) ..	6/8/02	4,530	1,485	3,020	4,530	1 0 0	25 0 0	90	1	12	45	1,403	..	50
New Roxburgh Jubilee Dredging Co. (Ltd.) ..	22/1/02	2,500	1,549	5,000	7,500	0 12 6	..	183	7	1,461	5,653	4,069	2,984	Nil.
New Royal Maori Gold-dredging Co. (Ltd. ..	14/7/02	1,556	1,359	..	1,556	1 0 0	197 10 0	66	8	271	1,043	1,892	..	190
New Skipper's Sluicing Co. (Ltd.)	16/9/02	3,310	559	87	2,638	Various	15 10 0	21	5	53	201	2,284	..	238
New Vincent Gold-dredging Co. (Ltd.) ..	4/3/02	3,000	3,000	..	3,000	1 0 0	..	10	7	445	1,681	4,469	..	74
Ngapara No. 3 Gold-dredging Co. (Ltd.) ..	13/9/99	5,000	5,000	2,000	7,000	1 0 0	..	78	7	1,305	4,524	4,607	350	127
Nokomai Hydraulic Sluicing Co. (Ltd.) ..	26/3/98	23,500	6,500	17,000	2,350	10 0 0	18 15 0	37	40	7,281	27,872	28,505	10,627	21
Oceanic Steam Gold-dredging Co. (Ltd.) ..	5/3/00	5,000	4,214	2,000	7,000	Various	417 7 6	78	..	..	..	3,976	..	6
Old Dunstan Gold-dredging Co. (Ltd.).. ..	17/10/99	8,500	6,500	2,000	8,500	1 0 0	340 0 0	139	1	206	781	7,413	..	1,618
Olrig Dredging Co. (Ltd.)	13/3/99	7,000	5,960	1,000	7,000	1 0 0	..	84	8	2,598	10,098	15,393	2,484	50
Otago Gold-dredging Co. (Ltd.)	20/5/95	4,000	2,000	2,000	4,000	1 0 0	..	51	14	6,158	25,482	16,544	6,000	1,024
Ourawera Gold-mining Co. (Ltd.)	23/5/95	3,000	3,000	..	3,000	1 0 0	..	18	..	4,713	18,630	17,150	4,765	35
Paterson's Freehold Gold-mining Co. (Ltd.) ..	15/7/99	8,000	5,702	4,000	12,000	0 14 6	98 6 8	30	16	2,379	9,161	14,772	1,500	4,955
Perseverance Gold-dredging Co. (Ltd.) ..	19/4/99	14,000	14,000	6,000	14,000	20/and 50/	..	126	17	8,584	33,226	33,186	14,000	99
Phœnix Dredging Co. (Ltd.)	27/9/02	1,500	1,500	..	30	50 0 0	..	15	7	155	618	1,839	..	127
Phœnix Water-race Co. (Registered)	12/10/67	1,500	1,500	..	1,000	1 10 0	..	18	2	..	..	..	7,088	Nil.
Pleasant Valley Gold-mining Co. (Ltd.) ..	4/3/95	700	672	300	1,000	1 0 0	27 11 0	30	2	2,094	8,061	6,378	1,750	112
Point d'Or Gold-dredging Co. (Ltd.)	26/3/00	10,575	2,713	2,220	10,575	0 8 0	437 10 0	142	8	452	1,733	3,805	..	133
Premier Sunrise (N.Z.) Gold-mining Co. (Ltd.)..	11/4/02	2,500	2,406	..	25,000	0 2 0	94 0 0	147	26	1,509	5,741	4,596	..	122
Prince Arthur Gold-dredging Co. (Ltd.) ..	13/2/00	9,370	6,725	3,000	16,000	1 0 0	6 5 0	156	7	328	1,260	7,789	..	1,129
Reliance Gold-dredging Co. (Ltd.)	30/10/99	3,600	3,000	600	3,600	1 0 0	..	55	7	1,426	5,491	8,655	900	180
Riley's Beach Gold-dredging Co. (Ltd.) ..	22/2/01	8,650	7,246	4,500	9,000	1 15 0	83 15 0	108	8	1,830	7,057	13,685	3,460	99
Rise and Shine Gold-dredging Co. (Ltd.) ..	24/2/00	10,000	9,745	2,200	12,000	1 0 0	255 7 3	191	10	1,938	7,458	17,565	300	1,144
Rising Sun Gold-dredging Co. (Ltd.)	16/2/01	8,000	3,175	2,500	7,500	0 12 6	181 10 0	65	..	..	..	2,314	..	15
Roberts' Naumai Gold-mining Co. (Ltd.) ..	18/8/02	1,200	201	1,800	2,212	0 10 0	4 12 0	14	7	59	226	207	..	555
Round Hill Mining Co. (Ltd.)	30/7/92	28,225	6,753	21,472	5,649	5 0 0	..	180	28	15,914	63,333	78,042	..	Nil.
Roxburgh Amalgamated Mining and Sluicing Co. (Ltd.)	2/3/89	29,153	12,737	15,000	29,152	0 18 0	..	160	22	18,687	72,398	64,858	20,769	Nil.
Royal Waimumu Gold-dredging Co. (Ltd.) ..	6/10/00	5,500	5,045	..	5,500	Various	455 10 0	60	8	948	3,704	9,775	..	1,035
Sailor's Bend Dredging Co. (Ltd.)	1/9/99	8,000	6,500	1,500	8,000	1 0 0	..	191	8	1,941	7,527	16,694	2,400	227
Sailor's Gully (Waitahuna) Gold-mining Co. (Ltd.)	3/6/96	2,000	100	1,800	2,000	0 10 0	..	10	4	1,353	4,924	4,390	751	45
Sheddon's Waikaka Freehold Gold-dredging Co. (Ltd.)	26/4/00	4,318	4,318	2,182	6,500	1 0 0	..	25	..	2,066	7,923	13,358	2,763	1,361
**Shotover Quartz-mining Co. (No Liability) ..	9/3/98	7,020	4,704	1,500	28,080	0 5 0	17 18 4	42	11	537	2,050	7,323	..	439
**Smith Gold-mining Co. (Ltd.)	19/10/98	1,700	1,700	300	2,000	1 0 0	..	18	4	596	2,356	4,301	..	223
**Spec Gully Gold-dredging Co. (Ltd.)	28/6/99	6,000	4,400	1,600	6,000	1 0 0	..	89	7	1,321	4,862	10,086	..	240

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STATEMENT of AFFAIRS of MINING COMPANIES, as published in accordance with the Mining Companies Acts, 1891, 1894, and 1900—*continued*.

Name of Company.	Date of Registration.	Subscribed Capital.	Amount of Capital actually paid up.	Value of Scrip given to Shareholders on which no Cash paid.	Number of Shares allotted.	Amount paid up per Share.	Arrears of Calls.	Number of Shareholders at present.	Number of Men employed.	Quantity and Value of Gold or Silver produced since Registration.		Total Expenditure since Registration.	Total Amount of Dividends paid.	Amount of Debts owing by Company.
										Quantity.	Value.			
OTAGO DISTRICT—*continued*.														
		£	£	£		£ s. d.	£ s. d.			Oz.	£	£	£	£
Tuapeka Dredging Co. (Ltd.)	31/7/97	2,800	2,500	300	2,800	1 0 0	..	44	7	2,769	10,659	11,272	2,730	118
Unity Gold-dredging Co. (Ltd.)	8/8/00	4,200	4,200	..	10,500	1 0 0	..	94	8	3,211	12,342	6,753	4,725	141
Upper Waipori Alluvial Gold-dredging Co. (Ltd.)	3/9/89	4,000	5,950	5,000	4,800	0 8 6	..	79	9	13,346	51,044	43,070	9,000	336
Voltaic Dredging Co. (Ltd.)	26/3/02	2,000	1,182	..	2,000	Various	137 4 6	56	8	128	492	2,783	..	6,311
Vulcan Gold-dredging Co. (Ltd.)	19/2/00	6,800	3,917	1,700	8,500	0 16 0	1,523 1 6	132	..	..	..	3,874	..	604
Waikaka Gold-dredging Co. (Ltd.)	9/5/00	4,900	4,534	1,600	6,500	Various	68 5 0	58	8	1,139	4,518	8,986	..	142
Waikaka Queen Gold-dredging Co. (Ltd.) ..	6/7/99	5,510	5,493	1,050	5,510	Various	17 0 0	98	8	942	4,038	10,574	..	814
Waikaka Syndicate (Ltd.)	20/12/01	3,000	1,623	4,000	7,000	0 12 0	176 13 0	16	7	..	..	3,363	..	1,809
Waikaka United Gold-dredging Co. (Ltd.) ..	11/2/99	4,700	4,275	6,500	11,200	1 0 0	425 0 0	26	18	2,758	10,617	14,389	..	1,405
Waimumu Gold-dredging Co. (Ltd.)	29/11/97	6,000	6,000	1,000	7,000	1 0 0	..	84	9	3,884	15,210	17,735	3,063	58
Waimumu Central Dredging Co. (Ltd.) ..	16/5/99	4,500	4,500	2,500	7,000	1 0 0	..	95	9	2,629	10,490	11,765	3,500	174
Waimumu Extended Dredging Co. (Ltd.) ..	25/4/99	6,500	2,000	4,500	6,500	1 0 0	..	51	8	2,326	9,043	9,453	1,463	127
Waimumu Queen Gold-dredging Co. (Ltd) ..	21/6/99	5,200	4,672	1,800	7,000	Various	8 10 0	60	8	1,954	7,700	12,118	1,225	99
Waipori Consolidated Gold Dredges (No Liability)	22/3/99	2,275	2,275	225	2,500	1 0 0	..	7	7	2,142	8,176	10,559	1,063	155
Waitahuna Cinnabar Co. (Ltd.)	3/8/00	1,500	1,095	..	1,500	1 0 0	207 0 0	53	2	..	..	1,098	..	Nil.
Waitahuna Dredging Co. (Ltd.)	22/2/02	1,380	1,380	..	1,380	1 0 0	..	23	6	496	1,908	2,878	483	56
Zealandia Syndicate (Ltd.)	21/10/99	4,000	4,000	3,000	7,000	1 0 0	..	59	..	..	..	3,729	268	92
Totals	..	1,160,399	663,032	442,402	1,325,978	..	13,798 6 4	13,780	1,074	387,467	1,500,227	1,566,593	465,664	74,741
Grand totals	..	2,674,822	1,346,765	723,278	6,259,994	..	42,079 15 1	26,689	1,965	735,814	2,612,536	3,292,770	765,162	133,867

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...TEMENT of AFFAIRS of MINING COMPANIES, as defined by Section 2 of "The Mining Companies Acts Amendment Act, 1897," and published in accordance with "The Mining Companies Acts Amendment Act, 1897."

Name of Company.	Date of Registration of Office in Colony.	Subscribed Capital.	Amount of Capital actually paid up in Colony.	Value of Scrip given to Shareholders on which no Cash paid.	Number of Shares on Colonial Register.	Amount paid up per share: Colonial Register.	Arrears of Calls: Colonial Register.	Number of Shareholders on Colonial Register.	Number of Men employed in Colony.	Quantity and Value of Gold or Silver produced since Registration.		Total Expenditure since Registration.	Total Amount of Dividends paid in Colony.	Amount of Debts owing by Company.
										Quantity.	Value.			
AUCKLAND DISTRICT.														
		£	£	£	£	£ s. d.	£ s. d.			Oz.	£	£	£	£
Kauri Freehold Gold Estates (Ltd.)	23/3/01	250,000	2,824	..	8,903	1 0 0	..	21	115	..	35,560	102,395	..	527
Kuranui-Caledonian Gold-mining Co. (Ltd.) ..	13/8/96	40,385	..	109,615	36,762	..	..	156	40	10,138	27,630	44,550	..	49
New Zealand Crown Mines Co. (Ltd.)	27/6/96	200,000	..	100,000	200,000	1 0 0	..	..	252	159,747	383,381	370,176	5,371	2,054
Waihi Gold-mining Co. (Ltd.)	7/12/87	495,907	19,212	53,333	19,747	1 0 0	..	220	1,200	2,411,906	2,502,905	1,611,680	36,207	28,259
Waihi Grand Junction Gold Co. (Ltd.) ..	22/12/97	155,000	2,260	112,500	8,915	1 0 0	..	59	26	..	..	69,532	..	246
Waitaia Gold-mines (Ltd.)	16/7/96	..	..	20,000	20,250	..	..	80	22	2,807	8,146	16,311	..	328
Waitekauri Gold-mining Co. (Ltd.)	6/5/95	228,076	6,015	30,000	19,278	1 0 0	..	111	114	382,879	365,169	449,954	5,467	1,626
Totals	..	1,369,368	30,311	425,448	313,850	..	..	647	1,769	2,967,477	3,322,791	2,664,601	47,045	33,089
NELSON AND WEST COAST DISTRICTS.														
Greymouth Lagoons Gold-dredging Co. (No Liability)	-/7/01	17,741	65	8,000	2,630	0 10 0	..	7	8	87	354	11,590	..	496
Taitapu Gold Estates (Ltd.)	16/12/95	149,276	..	..	..	..	..	..	37	2,872	11,273	43,197	..	Not given.
Totals	..	167,017	65	8,000	2,630	0 10 0	..	7	45	2,959	11,627	54,787	..	496
Grand Totals	..	1,536,385	30,376	433,448	316,480	..	..	654	1,814	2,970,436	3,334,418	2,719,388	47,045	33,585

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1903.

NEW ZEALAND.

INSPECTION OF COAL-MINES REPORT.

("THE COAL-MINES ACT, 1891.")

Presented to both Houses of the General Assembly by Command of His Excellency.

No. 1.

Mr. J. HAYES, F.S.Sc., Inspecting Engineer, to the UNDER-SECRETARY, Mines Department.

SIR,— Mines Department, Wellington, 11th May, 1903.

I have the honour to submit reports on the coal-mines of the colony for the year ending 31st December, 1902.

Output.

The following summary shows the output of the various classes of coal, &c., mined in each district:—

Class of Coal, &c.	Northern District.	West Coast District.	Southern District.	Total.
	Tons.	Tons.	Tons.	Tons.
Bituminous and semi-bituminous coal ...	92,761	752,285	...	845,046
Pitch-coal	...	...	25,245	25,245
Brown coal	99,284	1,531	326,357	427,172
Lignite	...	...	65,239	65,239
Oil-shale	...	...	2,338	2,338
Totals	192,045	753,816	419,179	1,365,040

Total number of mines at work, 180, only twenty-two of which employ more than twenty-one persons.

In comparison with the output of the previous year the foregoing summary shows a net total increase of 125,354 tons.

The subjoined statement shows the relative increase and decrease in the output of the various classes of coal, &c., in each inspection district:—

Class of Coal, &c.	Northern District.		West Coast District		Southern District.		Total Increase.	Total Decrease.	Total Net Increase
	Increase.	Decrease.	Increase.	Decrease.	Increase.	Decrease.			
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Bituminous and semi-bituminous coal	5,706	...	84,387	...	...	...	...	...	...
Pitch-coal ...	...	...	...	...	10,661	...	...	...	...
Brown coal ...	11,255	...	...	106	10,871	...	...	...	...
Lignite	...	...	...	...	12,290	...	...	...	...
Oil-shale	...	...	...	...	...	9,710	..	...	...
Totals ...	16,961	...	84,387	106	33,822	9,710	135,170	9,816	125,354

The approximate total quantity of coal, &c., raised from the several mines throughout the colony up to the 31st December, 1902, is 17,157,596 tons.

The number of persons ordinarily employed is returned at 803 above ground and 2,082 below ground, making a total of 2,885; but it is to be remembered that many of the men included as working above ground are engaged in actually getting coal or lignite at opencast pits or quarries, of

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which there are a large number in the Southern District, many being of very small extent, and supplying fuel for private use or a limited community. The total number of persons ordinarily employed shows an increase of 131 as compared with the returns of the previous year.

In computing the average output per person employed, a further increase is noticeable — viz., 473·15 tons per person, as compared with 450·1 tons in 1902. No doubt the steady work which has been noticeable throughout the colony, together with the features referred to in last year's annual report—viz., the extensive use of coal-cutting machinery by the Westport Coal Company (Limited) and the amount of open quarry-work at lignite-pits—is responsible for the increased rate of production in comparison with the numbers of persons employed.

Accidents.

Only two accidents have occurred during the year which have been attended with fatal results. In one instance a youth was caught between two loaded tubs and received injuries from which he died two days later, and in the other case a young man was struck on the knee by a tub in motion. As the result of this apparently simple accident the injured person died three months and a half later.

The ratio of fatalities during the year is one for every 1,442·5 persons employed and 682,520 tons raised.

Of non-fatal accidents the greater number appear to have been in connection with the handling of tubs and from pieces of coal flying from the face and striking the eyes of miners. This latter class of accident, however, appears to be diminishing, the circular issued by the Mines Department (for posting up at the mines) dealing with eye accidents having evidently been of practical utility. As a further safeguard, the use of wire-gauze eye-shields is becoming more general at those collieries where "proud" coal has to be worked.

Accidents from falls of roof and side are not common, and, taken all round, there is undoubted evidence of the exercise of considerable care on the part of mine-managers to insure the safety of the persons employed.

Prosecutions.

A prosecution was instituted against a manager holding a second-class certificate for employing a greater number of persons at one time than is allowed by law under this grade of certificate. Defendant was fined and mulcted in costs.

Prosecutions of employees were also instituted by the manager of a colliery for violations of the general and special rules, and convictions obtained. It is to be hoped the action will have the effect of making the men more careful; and it cannot be too generally known by managers that where employees commit breaches of the general or special rules, which are framed for the general safety of mining operations, it is their duty to bring the offenders before a Court of justice. Some managers do not appear to understand this, and erroneously think that action can only be taken by an Inspector of Mines.

Government Collieries (State Coal-mines).

A considerable amount of my time was taken up during the year in supervising prospecting and other works at Seddonville, and also the Point Elizabeth property, near Greymouth. At the first-named place systematic prospecting by a trial drive, borings, and trial shaft-sinking proved a seam of coal averaging upwards of 14 ft. in thickness to exist under the tract known as "The Cave Area." A main tunnel to reach the coal was then commenced, and the necessary surface haulage-road surveyed and its construction put in hand.

Some prospecting was done and several preliminary surveys made at the Point Elizabeth property, in order to determine the most advantageous positions for opening into the respective sections of coal which can be won level-free, and towards the end of the year the several tunnels were commenced. Mr. A. B. Lindop (formerly of the Westport Coal Company, Limited) having been appointed general manager, I handed over both properties into his charge in December last. The completion of the partially constructed railway from Greymouth to the Point Elizabeth Colliery has been taken in hand by the Public Works Department, and good progress is being made with the work.

Mechanical Ventilation.

Two permanent installations have been made during the year—viz., at Nightcaps Colliery, Southland, and Millerton Colliery, near Westport, the colonial-type "Hayes" fan being adopted in each case. The fan at Nightcaps is designed for a working-speed of 200 revolutions per minute, and is 9 ft. in diameter. At my visit it was working at rather less than half the speed named, and circulating 38,000 cubic feet per minute. The airways are large, and consequently resistances are light. At Millerton the fan has a diameter of 9 ft. 6 in., and is designed for a working-speed up to 250 revolutions per minute. Its present working-speed is 150 revolutions, at which a current of some 65,000 cubic feet of air is circulated at a water-gauge of 0·5 in.

Utilisation of Soft Coal and Slack.

I have in former reports referred to the uses to which soft coal and slack may be put in the manufacture of briquettes, and am now enabled to give a description of a method of using the small and soft fuel—which goes to waste at some mines—without any other preparation than that of grinding it into powder. It will, of course, be seen that the ordinary method of hand stoking becomes inadmissible, but the means adopted appear simple, effective, and economical. The operation may be classed as one of "automatic coal-dust firing," and I am indebted to one of my engineering friends for the following description:—

For a long period efficiency and smokelessness in firing was a perplexing problem to engineers. In some degree the nuisance of intensely black smoke issuing from a factory or works chimney has been prevented or abated, but not without loss of efficiency. To attain both desiderata has

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Surface Works at Hikurangi Coal Company's Mine, showing Limestone Rocks and Hikurangi Mountain in background.

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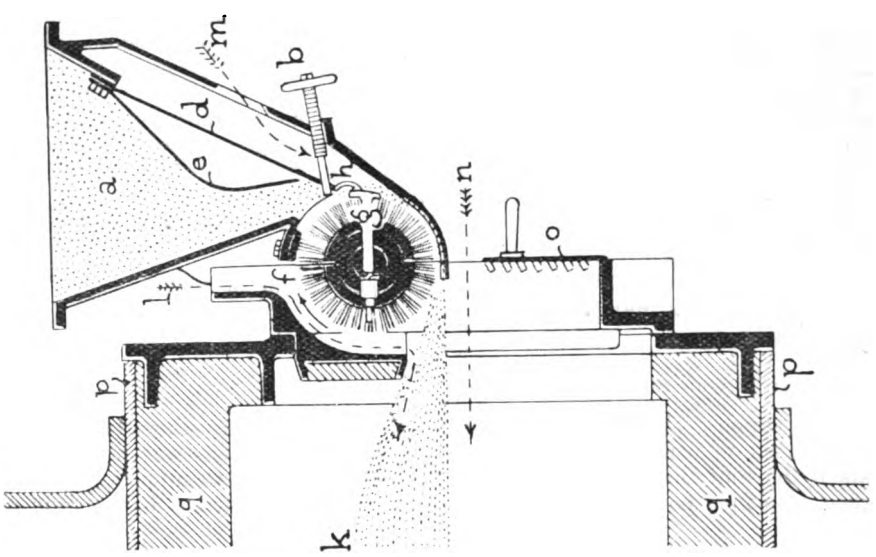
cost innumerable experiments and great expense, but their combination is absolute in the Schwartzkopff system of coal-dust firing. The idea of utilising coal-dust as the best means of securing perfect combustion is not of recent date, but it may safely be said that the principle was not accurately and economically applied until the Schwartzkopff system was discovered.

Briefly stated, the system is this: Slack of the poorest quality is pulverised to the consistency of flour, then carried along a conveyer or iron pipe and sprayed into the furnace by a revolving steel "brush." No bars or grating are needed in the furnace. A piece of common cotton-waste soaked in petroleum, ignited, and put into the furnace is sufficient to start the fire. Within a few minutes after the brush has been started the furnace attains a white heat. Steam sufficient to drive a 300 I.H.P. engine can, if necessary, be generated in half an hour; but, as this precipitancy would do the boiler no good, the "feed" can be regulated to get up steam as gradually as by ordinary hand firing. A peep into a furnace fed on the Schwartzkopff system affords a truly marvellous sight. There is a greater intensity of heat by many degrees than is possible with hand firing, yet no coal or ashes are present. Only a small quantity of white dust, which falls in a molten state to the bottom of the furnace, is to be seen. Numerous tests have proved that with the very worst slack on the market the Schwartzkopff system shows at least 30 per cent. better results in firing than by hand stoking. This is the especial merit of the system. The smokelessness is an important though subsidiary advantage which enhances the merits of the system. By it the problem of perfect combustion is solved. Hand stoking is, of course, absolutely abolished. One man can with ease look after a battery of a dozen furnaces. To large firms this item of labour-saving would mean many thousand pounds per annum.

The Schwartzkopff system was discovered by a band of German experts and professors, and has been known in Germany a few years. Its introduction into Great Britain is of recent date. A British company has been started and works erected at Haydock, Lancashire, on land adjoining the Princess Pit, Haydock Collieries. These works are really the mill for grinding slack into coal-dust. The mill is driven by a 300 I.H.P. triple-expansion engine, the steam for which is supplied by a water-tube boiler of the Stirling type, heated on the Schwartzkopff system, the efficiency of which thus being demonstrated in the preparation of its own fuel. On the private railway-siding adjoining the works are trucks containing the slack delivered from the colliery. This slack costs 4s. a ton, and, as the price indicates, it is the very poorest kind of fuel that can be bought, containing the lowest percentage of combustible material of any coal produced from the colliery. Results of tests in firing with the coal-dust from this slack are given below.

From the trucks the slack is shot into an elevator, which carries it to the mill. After going through two pre-sifters the slack is separated into two grades. The larger grade passes away and is deposited into a store-chamber; the finer grade is put through a series of sieves, where the dust already fine enough for the process is separated, and the tailings from this go into boxes. The larger grade is then drawn off into a conveyer, by which it is lifted to a series of crushers and discharged thence into the sieves, the dust fine enough for use passing through and the tailings deposited into boxes. These tailings then go into pulverisers, and, reduced to dust, are ready for use. When brought to its intended state the dust goes along a conveyer, and is put into sacks for the market. The process of manufacture is much the same as that of flour-milling. In fact, the coal-dust is as fine as fine flour. It passes through a sieve of 5,800 meshes to the square inch. If desired, the coal-dust can be delivered in covered trucks to consumers as well as in sacks.

This description refers exclusively to the mill which prepares fuel for the market, but a proportion of the coal-dust manufactured is utilised for firing the boilers that drive the works-engine, the dust being taken along a "worm" conveyer to the patent automatic stoker at the furnace. Large factories or works may have a mill sufficient for their requirements attached to the furnace apparatus, and manufacture their own coal-dust; but smaller users may find it more convenient to get their supplies from a central mill or works. The accompanying illustration shows the patent stoker, but not the conveyer which deposits the dust into shoot (*a*.)



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The shoot (*a*) receives the pulverised coal. It is closed on the bottom by the bent steel plate (*c*), adjustable by the screw (*b*) and the loose flap (*d*). A fixed plate (*e*) relieves the flap (*d*) from the pressure of the powdered coal. (*f*) is a brush, the bristles consisting of steel wires. It carries in the middle the hammer (*g*), which strikes at every revolution of the brush against the nose (*h*) of the steel flap (*d*), and moves the same slightly back from the plate (*c*). As this latter is kept by the screw (*b*) in its position, a slot-like opening is made with each revolution of the brush, through which the powdered coal falls upon the brush. The coal is caught by steel-wire bristles and driven into the combustion-chamber (*k*). As soon as the hammer (*g*) has passed the nose (*h*), the flap (*d*), owing to its elasticity, strikes back against the plate (*c*). In this manner the coal-dust is kept agitated in the shoot, and consequently an absolutely regular feeding-down takes place. The combustion-chamber (*k*) is formed in the simplest manner; for example, in a flue boiler by lining the flue with firebricks for a length of 5 ft. to 9 ft., and providing a fire bridge at the end of this lining. The brick walls (*g*) attain in a very short time the temperature necessary for constant ignition of coal-dust. The first ignition of the coal-dust is effected without any difficulty by a small wood fire or by burning a little old waste soaked in petroleum. A boiler standing all night has the fire properly started in five minutes. The necessary amount of air is introduced to the furnace in the directions indicated by the arrows (*l*, *m*, and *n*), and it is quite sufficient to regulate the admission by the sliding plate (*o*). The amount of coal-dust is regulated during the firing by the screw (*b*). The further the screw is pushed back the wider becomes the distance between (*c*) and (*d*). During firing, only the regulation of the plate (*o*) and the screw (*b*) is necessary, and the only work for the fireman is the removal every ten hours of the ash-dust which, as already explained, lies in a molten state at the bottom of the combustion-chamber, but this operation does not affect the working of the furnace. One man can attend a battery of twelve boilers or even more. For driving the firing-apparatus mechanical power is necessary equal to only one-tenth of a horse-power.

Some of the advantages of the apparatus are here enumerated:—

(1.) Combustible materials and fuels of the lowest quality can be burnt. Earthy lignite, mineral coal, anthracite, or charcoal can be used with the greatest effect without any change in the apparatus. The highest percentage of ash in the coal is no hindrance in the case of the coal-dust firing.

(2.) Absolute smokelessness. It is possible, without trouble, to work with perfect absence of smoke and yet to attain an amount of carbonic acid in the waste gases nearly equal to the theoretical (calculated) maximum.

(3.) The highest calorific efficiency is obtainable from the fuel, which can be only partially attained with a grate furnace, and even with the extra cost of pulverising the coal there is still a very great saving of fuel.

(4.) Minimum wear-and-tear of the boilers, because the firing is continuous. There is no opening of the fire-doors.

What is claimed for the system has been abundantly proved by tests. The economic value of the apparatus is beyond question. Its perfect combustion produces the highest calorific efficiency from the fuel, which is impossible with ordinary hand-stoked furnaces because of the accumulation of huge clinkers and opening of the furnace-door to extract these, and the consequent inrush of excessive oxygen, which prevents perfect combustion. If the highest calorific efficiency is attained a higher pressure of steam must result. The remarkable superiority of the Schwartzkopff system is shown in the fact that better results are obtainable by it from the worst kind of fuel than from the very best coal with ordinary hand stoking. No steam-user would think of purchasing common "dant" or slack, costing only 4s. a ton, for firing his furnaces. The cheapest slack he buys is 6s. a ton, and though he has thus to pay 33⅓ per cent. more for his fuel he has to be content with at least 30 per cent. worse results than obtained by the Schwartzkopff system with the cheaper fuel. Therefore, calculating the cost of milling at 1s. per ton, which brings the price of the slack to 5s., there is still a saving in the cost of fuel of 20 per cent., plus 30 per cent. better results. The benefits and advantages do not end here, as labour, which is a considerable item of expense in the hand-stoking system, is reduced to a minimum. A large firm adopting the Schwartzkopff system would therefore effect a saving which in a very short period would cover the cost of laying down the necessary plant both for milling and stoking. The apparatus can be fitted on ships, as well as for smelting, reheating furnaces, rotary furnaces, salt-pans—in fact, for all kinds of furnaces, whether for generating steam or heating.

Tests have been made with water-tube and Lancashire boilers. The following is the result of the comparative tests between hand firing and the Schwartzkopff system recently made with a Lancashire boiler. Boiler conditions were the same in every way when fired by both systems, but the fuel used for the hand firing was slack of good quality (market price 6s. per ton), while the fuel used for the Schwartzkopff was the inferior slack, costing 4s. per ton, which had passed through the ⅝ in. mesh screen at the pit:—

Water evaporated by Schwartzkopff system per pound of fuel from and at 212° Fahr.	8·10
Hand-firing	6·68
Difference in favour of coal-dust firing	1·42 = 21·25 per cent.

It is reasonable to suppose that, working under ordinary conditions, the 21·25-per-cent. saving could still be increased on account of loss through fire-bars, &c., which was prevented during the hand-fire tests by burning the ash over again. It is also reasonable to suppose that if the calculation was worked out at per pound of combustible the percentage in favour of dust-firing would still be increased.

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Recent tests have also been made with the Stirling boiler fitted at the Schwartzkopff works at Haydock, with the following results: Duration of test, eight hours; steam-pressure, 168 lb.; temperature of feed, 60° Fahr.; total fuel used, 5,264 lb.; total water evaporated, 397,230 lb.; water evaporated per pound fuel actual conditions, 7·54; water evaporated per pound of fuel from and at 212°, 9·12 lb. Gas-analysis average: CO_2, 12½ per cent.; CO, nil; O, 74; temperature, 420° Fahr. exit flue. Analysis of fuel: Moisture, 4·15 per cent.; volatile matter, 25·60 per cent.; fixed carbon, 53·75 per cent.; ash, 16·50 per cent.

The fuel used was the small screenings (Rushy Park seam) taken from slack as it passed over a ⅜ in. mesh screen, and was of the lowest calorific value. Its market price at the time of the test was 4s. per ton. At no time during the test was smoke observable at the chimney. The only indication that the chimney was in use could be traced from a very slight white vapour emitted from time to time.

*The Advantages and Disadvantages of Electricity as an Underground Motive Power.**

Steam-engines for haulage purposes were on their original adoption invariably fixed underground, and the motive power either generated in boilers at the surface and conducted through special pipe-ranges down the shaft to the engine, or the boilers were fixed underground in close proximity to where the steam was required. Either of the above systems produced a series of great disadvantages, which amounted in each case to a source of danger. For instance, the pipe-ranges in the shafts, being subjected to varying temperatures, were affected by unequal expansion and contraction, the result of which was fractured pipes or blown joints, which meant suspension of work until the evil was remedied. In course of time this was partly overcome by the introduction of expansion-joints at regular intervals in the range, though a serious loss occurred through condensation in transmission, which it may be noticed was continuous whether the engine was at work or standing. This gave rise to the introduction of underground steam-generating plant, which, needless to say, is at best bringing the attending dangers to the place where they are least desirable, as with their advent there sprung up a direct risk to underground fires, and in some cases disastrous explosions of firedamp, the nature of which is too well known to need any comment here.

Another and serious objection to the use of steam for doing work underground is the heat which it imparts to the strata, which in the ordinary shales of the coal-measures has a very deteriorating effect, making the roadways and other passages through which it is conducted very bad to keep, and consequently increasing the cost of this particular branch of labour and material. Independent of this there is also the difficulty of dealing with the exhaust steam, as in deep mines anything approaching perfect condensation would be impossible to obtain, while its efficient working-limit will probably be about one mile from the generating-point.

Hence with such objections attending the use of steam as an underground motive power it is only reasonable to expect that mining engineers, who were directly responsible for the safe and economic working of mines, should devote their time and attention to bring forth some suitable means of supplanting it. This was, in one course, to a certain extent obtained by the introduction of compressed air, to be used as a means of transmitting the work done on the steam-piston, through suitable pipe-ranges, to distant motors arranged for the purpose of hauling, pumping, machine coal-cutting, and rock-drilling.

The advantages of using compressed air for the above classes of work are that the temperature of the mine is unaffected, except about the exhaust, where it is below the normal. The air can be stored in fixed receivers and readily branched off to any point where it may be required, while after doing its work on the motor it may be employed for ventilating purposes. Compressed air has also a longer efficient range-limit than is the case with steam, as it is estimated that with carefully laid-out installations it may be used with advantage for a distance of three miles from the compressor.

The disadvantages attending the use of compressed air are the cost of providing and maintaining the compressing plant, and the low efficiency—probably not exceeding 25 per cent.—of the steam-pressure applied to the piston, this being due to cooling at the compressor and the friction set up in the pipe-range.

Another and very serious objection to the use of compressed air is the liability to ignition and explosion within the receiver adjoining the compressor. These have been of frequent occurrence, the most notable in our own country being at Ryhope in 1883, Carn Brea Mine in 1885, Newbattle Colliery in 1888, Wharncliffe Colliery in 1893, and Clifton Colliery in 1897; and, although I have no record of any of these being attended with loss of life, some idea of their effect upon the surrounding plant and other appliances coming within the line of their action may be obtained from the Ryhope case, which is in our own immediate neighbourhood, and consequently may be quoted with some degree of confidence. This explosion occurred at 10.40 p.m. on the 1st March, 1883, in which case the No. 1 receiver, fixed at the surface, was rent to pieces, and the report accompanied by a rush of flame, which attained a height of from 20 ft. to 30 ft., and though the flame rapidly diminished in volume it still continued to burn about the broken connection. Some surface damage was done, though the chief effect was confined to the shaft, where the brattice wall suffered severely, and at a depth of 762 ft. from the surface a segment of metal tubbing was blown ½ in. outwards from the pit. At a depth of 1,080 ft. several pipes were partially split open. From 1,200 ft. to 1,272 ft. the shaft was completely stripped of brattice, buntons, and other fittings. The pipes below this point were much damaged, and the No. 2 receiver, which was fixed at a depth of 1,500 ft. from the surface, was found at the shaft-bottom, while the effect of the explosion was felt at a distance of 1,000 yards from the shaft-bottom, at which point the top of an air-crossing was blown off and the ventilator for the time being partially damaged.

* A paper by Mr. W. Little, New Seaham Mining Students' Association, Durham, England.

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It is not within the scope of this paper to deal with the cause of these explosions, but it may be here stated that the theory is a very feasible one, and the conditions necessary to produce them are frequently present, especially about a coal-mine. Consequently we may at once conclude that compressed air is not the simple, though rather costly, agent it is generally given out to be.

Another source of power which is very readily obtained in most mines is that due to a head of water, giving rise to what is commonly termed hydraulic pressure. This is easily transformed to do useful work on machines for hauling, pumping, rock-drilling, and, if needs be, machine coal-cutting; and though it gives a high efficiency—about 70 per cent. of the pressure employed—the repumping of the waste water greatly reduces this, and involves the application of much heavier pumping plant than what in its absence would be really needed. So that, except in cases where free drainage can be obtained, hydraulic pressure does not commend itself for use as a motive power in mines where economy with safety is becoming a very important necessity.

There is yet another, though at present a much-neglected, system of transmitting power to do work underground—viz., the telo-dynamic or wire-rope system, which, when carefully laid out to run at high speeds under comparatively small strains. has been known to give off 60 per cent. of useful work at a distance of 3,000 yards from the generator. The loss of power due to friction and other causes in a carefully proportioned above-ground transmission has been proved to be only 2½ per cent., with an additional ¾ per cent. for each 1,000 yards added This, it must be acknowledged, is very satisfactory, especially when its distance-limit of application is equal to that of compressed air and much beyond that of steam. It need scarcely be noticed that it would be impossible to obtain such efficient results in underground installations owing to the irregularity of the roads, which would demand the use of guiding-sheaves at the various curves, so common even in the best-laid-out mines. Nevertheless, there is no doubt but that from 30 to 40 per cent. useful effect would be gained under any ordinary condition likely to be met with underground. The only disadvantage to this system of transmitting power is the necessity of having extra ropes running in the shaft, which it may be noticed is rather an objectionable feature, especially in winding-shafts.

After having carefully considered the advantages and disadvantages of each of the foregoing systems we find that each one involves a certain amount of risk which it is almost impossible to overcome, and also that the efficient limit distance is only about three miles, which is much below what will be required in the future when the still deeper-lying coal-seams have to be won and worked; and, finally, that in the very best of the available installation the efficiency at the distance-limit may not exceed 30 per cent. of the original power applied to the generating-piston. There are other causes that are sure to arise in the deeper workings, such as increased temperature, which will tend to reduce the produce per man employed, while the great thickness of overlying strata will demand modified systems of working that will insure a uniform subsidence throughout the whole area worked. This, then, seems to suggest a general adoption of straight-faced long-wall, with machine coal-cutters employed throughout. Therefore we may look forward to a more extensive employment of machinery in mines, and the duty of each and every man who is in any way interested in mining is to endeavour to find some safe and economic means of transmitting the power necessary to give motion to these machines.

The solution to this problem seems to depend upon electricity, a force which forms the basis of the latest applied science, and is a source of energy that may be readily transformed into useful work at almost unlimited distances from its generator; it may also be split up into any number of branches, each capable of doing work at any point where it may be required. Another and very important advantage in favour of its use is the many and varied classes of work to which it may be applied. For instance, in most modern mines electricity is used for signalling on engine planes and in winding-shafts. It is also used for speaking purposes, as in the telephone—a simple instrument, which renders talking-communication possible between all points in connection; while in mines where safety lamps are used it is now considered the only means of firing shots. Again, electricity is at present being largely employed to do the heavier work of lighting, hauling, pumping, machine coal-cutting and rock-drilling, and in some few cases for winding and the driving of ventilating machinery. Consequently, in electricity we have a force that is capable of supplying all our requirements. This prevents the employment of mixed plants, which is anything but a desirable feature where the distribution of power is concerned, and should be avoided in cases where extreme danger was likely to arise from its general adoption.

Electricity for signalling or speaking purposes only demands the use of very feeble currents, usually produced by chemical action set up by causing the liquid chloride of ammonium to act upon two distinct metallic substances, usually copper and zinc, in connection with each other by a suitable wire circuit, or by substituting carbon for copper, which is done in the Leclanche cell, commonly used for this purpose in mines, and the extent through which the electric energy may be felt depending upon the length of the connecting circuit.

Shot-firing is usually done by means of a small magneto electric battery or miniature dynamo, in which case the feeble currents from the electrically excited magnets pass along the cable to the highly sensitive detonating material enclosed in the copper tube, commonly termed the detonator. Sufficient resistance is set up in the detonating material to cause a spark to pass in the high-tension arrangement, or to heat a very fine strip of platinum in the low tension, either of which is sufficient to detonate the matter and explode the charge.

As the object of this paper is to deal with currents of sufficient power to do heavy mechanical work, it is not my intention here to give more than a passing reference to those branches whose action depends upon the feeble currents set up by chemical action. Consequently, for purposes requiring large quantities of electrical energy, mechanical appliances, commonly termed dynamos, are used to generate the electricity, and are driven by some convenient power, such as a head of water or a steam-engine, the first being the most economical if naturally supplied in sufficient

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quantities to do the work required of it. The work done by the prime mover upon the dynamo is converted into electric energy and conducted through carefully insulated cables to the motor from which the work is done.

The distance between the motor and the generator may be almost said to have no limit, as at distances of ten miles from 50 to 60 per cent. of the power transferred to the dynamo has been returned in useful work at the motor. This would seem to be sufficient to warrant its adoption, providing that anything approaching absolute safety could be guaranteed, which unfortunately is not so, the chief danger arising from the ready transformation of electric energy into intense heat, a feature not very desirable in coal-mines, where the ventilating-currents are liable at any time to become so charged with carburetted hydrogen as to form a highly explosive mixture, which would undoubtedly produce serious results in case of contact with sparks, such as are frequently given off from the commutators, which at regular intervals are arranged to break the current at the motor and so set up motion; sparks are also given off from broken cables, which frequently occur from falls of roof or through high-speed sets leaving the rails. Shocks are another source of accidents arising from the use of electricity in mines, and are sufficient in most cases to produce instantaneous fatal results; and, though electricity is the cause, the effect is solely due to the ignorance of those affected, consequently we may infer that with increased knowledge, due to more extended use, this source of accident would in time disappear.

The method just referred to is known as the continuous-current system, deriving its name from the fact that the flow of the current is continuous, a feature which renders it very suitable for electric lighting, when steadiness in the light can only be got by a uniform and continuous supply. As previously stated, the system involves the use of commutators at the motors, which invariably causes sparking even under ordinary working-conditions, while with excessive resistances the heat developed is sufficient to fuse and consequently destroy the working-parts.

Since the presence of commutators must invariably under certain conditions be accompanied by sparking, much attention has been given to the devising of some reliable means of preventing the sparks from coming in contact with the outside atmosphere, and so dispense with the danger of igniting gaseous mixtures; and it is very satisfactory to know that some advance has been made by enclosing the motors in gas-proof steel cases, in which are suitable doors that can be opened and closed as required for inspecting and lubricating the working-parts. These arrangements are all very well so far as the attainment of their original object is concerned, but unfortunately their adoption shuts off the working-parts from the sight of the person in charge, and so admits of damaging effects going on unknown to those whose duty it is to prevent them.

Sparks arising from broken cables can scarcely be said to incur so much danger, for the simple reason that they are to a great extent carried along the main intake airways, where explosive gas, even in infinitesimal quantities, may never be expected to be present. Consequently, the chief danger from this source would be the liability to fire any combustible material, such as a very sensitive coal, timber, or canvas, any of which might form a primary cause to serious secondary effects. The protection of conducting-cables has also received some attention, such as having them enclosed in wood casing or in iron tubes, the latter of which is preferable, though it offers some trouble to the locating and repairing of any damaged part, which at times must be necessary. This case is by no means general, nor can it be said to be actually necessary, but simply a precaution. I have known two extensive plants used for underground haulage, pumping, and coal-cutting, where the cables were simply of the best insulated type, and conducted together along the side of the roadway to the point required, and though these have been in use for some years there has never been one single accident traceable to them.

The continuous-current system of distribution is the one which up to the present has been mostly employed in this country, and as these are costly to replace they may be expected in many cases to remain, even in the face of the more modern multiphase or alternating-current system, which has been largely introduced in America and on the Continent. In this system the current is transmitted alternately to the motor as required, and so dispenses with the commutators, and gives almost absolute freedom from sparking even under the most extreme conditions of unequal loads, which would cause the continuous-current motor to destroy itself. Again, in the latter system the conductors which carry the high-tension currents revolve and consequently cannot be insulated, while in the alternate-current system these are stationary, and so admit of perfect insulation, thus limiting the risk of sparking to the switches and broken cables, both of which exist in the first system. Alternate currents do not commence the load so readily as continuous currents, neither are they so applicable to perfect lighting, while the force of shock from the alternate system is about one and a half times more powerful than that of the continuous system; hence we see that even the latter has many disadvantages, each of which offers a fair field for the inquiring student.

The great advantage of the alternate system is that currents of almost any voltage may be produced, and by the use of transformers reduced to any voltage required by the particular class of work to which it is to be adapted. Consequently, in it we have an ideal system for the formation of central power-stations from which the supply necessary to meet the wants of a fairly large district may be drawn. This has been carried out on a rather extensive scale in America, where nature has abundantly supplied a cheap and efficient motive power in the numerous water-falls, thus requiring little more outlay than that incurred in laying out the generating plant, which are used to create currents of from ten to twenty thousand volts, for distribution at the required tension to meet individual wants. Some idea of the economic aspect of the system may be drawn from the fact that the Niagara Electric-power Supply Company are prepared to supply power for continuous night and day loads at the rate of £3 12s. per horse-power per annum, and calculations have been made in which it has been shown that the company can afford to distribute power within a radius of two hundred miles at a less cost than it can be generated by users with

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the highest class of steam-engines using fuel at 12s. per ton, while for small loads up to 500-horse power they can safely compete up to a distance of fifty miles, a feature which must be admitted is sufficient to demand the attention of all who are responsible for the generating and distribution of power to do useful work.

Previous to the conclusion of this paper I may perhaps be excused for stating that, although we have some very able electric engineers capable of designing and erecting excellent installations to do all classes of work that it is possible for any motive power to do, we do not in this country seem to take the same interest in the theory of production and transmission of electric currents that is taken by our scientific brethren of America and those of many European nations, where mining forms an important branch of their national industry.

With respect to the spark problem, it may be noticed that some very elaborate experiments have been carried out in Belgium to prove the risk to firedamp explosions, which may be said to be the one great disadvantage which prevents the general adoption of electricity as a motive power in mines. The result of this inquiry was that under given conditions the spark may be produced without exploding the most sensitive gaseous mixture, a feature which was obtained by joining up by a secondary conductor the two points between which the spark passes, when it was found that with the resistance at a high value the current-breaking spark invariably caused an explosion. The corollary to this is that when the spark takes place in a single circuit, the breaking of which completely cuts the current, explosion is the inevitable result. On the other hand, explosions are more easily avoided the nearer the ratio of resistance approaches unity, while both above and below this value there is, as it were, a boundary-line within which explosion is avoidable. Hence the solution of the spark problem seems to depend upon the finding of this boundary-line and of carefully adapting the working-conditions to it in such a manner as to insure its permanency, a feature which alone would warrant the general adoption of high-tension electricity to do work in deep and dry coal-mines, which invariably have a continuous and in some cases a sufficiently heavy natural discharge of firedamp to render the currents in many instances more or less foul, and the consequence would be that the introduction of electricity would, in the event of certain damage to its parts, or from extreme irregular working-conditions, increase the risk of explosions, a feature to avoid which is ever the chief consideration of those who are responsible.

Therefore, in making a general summary of the advantages and disadvantages of electricity as a motive power applicable to general underground work in mines, we find that in it we have a force that is easily conducted to any point or points required—these may be at any reasonable distance, say up to ten miles, from the generator—will do any class of work that it is possible for any other power to do, and gives off an efficiency of from 40 to 60 per cent. of the power transmitted to the dynamo, while the first cost and general maintenance would be less than a compressed-air installation fixed to work at its much shorter distance-limit. Against this we have the risk of sparking and the liability to persons receiving shocks. Consequently, in concluding this paper I would advise every mining student to make the study of electricity an important branch of his educational curriculum, when the possibility would be that Britain may produce one man to do for electricity that which George Stephenson accomplished with steam, and so place it upon a sound and safe basis for use under any conditions that may occur either above or below ground.

Examination for Mine-managers' Certificates.

The papers used at the examinations held in the beginning of February, 1903, are appended.

Schedules.

The list of persons holding certificates of service and competency as coal-mine managers is appended, as are also the statistics of output, persons employed, &c.

I have, &c.,

JOHN HAYES,

Inspecting Engineer.

The Under-Secretary for Mines, Wellington.

No. 2.

Mr. JAMES COUTTS, Inspector of Mines, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,— Inspector of Mines' Office, Thames, 7th February, 1903.

I have the honour to furnish herewith the following report on the coal-mines in the Auckland District for the year ended the 31st December, 1902, in compliance with section 67 of "The Coal-mines Act, 1891":—

Kawakawa Mine.—The operations in this mine have been chiefly directed to working out pillars near the outcrop under Carraway's Hill. On account of the pillars being small and the covering of the coal having settled down from the surface around the pillars, some of the men are required to be continuously employed driving through the fallen ground, exploring for pillars to keep up a regular supply of coal. A natural result is that a large amount of timber is required to keep the men safe, thus adding considerably to the cost of production, but as the coal is easily worked it just about pays expenses. It is true the amount of coal raised from this mine is only very limited; still it is a boon to the district, affording, as it does, a supply to the locomotives on the short line of Government railway and the Northern Steamship Company's boat trading between Auckland and the northern ports. Six men were employed during the year, and the quantity of coal raised was 3,640 tons. The mine was inspected twice during that period, and was found to be safe and the ventilation good.

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Hikurangi Coal Company.—The manager is still directing the operations in the mine to that portion that lies on the eastern side of the railway-line. The level southwards has been driven as far as the seam extends in this direction at this level, and the men are now engaged in driving a few of the bords to the outcrop and splitting pillars. Similar work is being done on a section on the north side of the main incline. A new dip has been started from near the winding-engine shed, with the object of at some future time driving a haulage-road under the railway to open up the coal on the western side of the line. This dip at the time of my visit had been put down on the coal to within a few feet of the railway reserve. The water was then being pulled up the dip in tanks, but before much work is done here it will be necessary to erect an engine for pumping purposes, as a quantity of water will eventually be met with as the work proceeds. The company has been very successful during the year, although the output shows a slight decrease on the previous year. Still the profit on the year's operations was sufficient to enable the directors to declare the usual dividend, which must be highly encouraging to the shareholders. There was an average of fifty-four men employed, and the output of coal was 39,119 tons. The mine was inspected twice. The ventilation was good on both occasions, the workings safe, and abundance of timber and props at the mine to secure the workings as required.

Northern Coal Company (late Hikurangi Collieries, Limited).—This mine is worked from an adit level driven in from the side of the hill. The operations during the year have been mostly confined to development-work and mining coal on a portion of the property situated about half a mile in a north-easterly direction from the old mine which was worked out during the previous year. A horse tram-line has been constructed from the head of self-acting incline to the new workings, a distance of 42 chains. The coal—as far as it has been opened up—is of good quality, but is a good deal broken and disturbed by faults. It averages about 5 ft. 6 in. in thickness, but owing to faults being frequently met with the amount of coal obtainable from a given area is very uncertain. As the seam here is above water-level, it gives the company a natural advantage of being in a position to place the coal on the market at a small cost, and at a profit. The mine was inspected twice during the year. The ventilation was good, and the works generally carried out in a safe and satisfactory manner. An average of twenty-eight men was employed, and the output of coal for the year was 7,946 tons, an increase of 4,160 tons over the previous year.

Phœnix and West Bryan's.—Those two mines, which adjoin each other, are worked conjointly on behalf of Mr. S. C. Brown and others. The work in progress during the year has been confined to splitting and taking out pillars. In the West Bryan's section all the payable coal in sight has been extracted, and in the Phœnix the amount of coal opened up is very limited. Without prospecting-work is carried out and a new discovery is made outside the faults that have been met with, the prospects of producing coal in payable quantities for a lengthened period is very remote. A start has been made to put down a dip incline near the railway for the purpose of opening up some coal that is said to exist in this section of the property. An average of nineteen men were employed, and the output of coal was 9,901 tons. The workings were safe and ventilation good at each inspection.

Ngunguru Mine.—Operations in this mine have been steadily carried on during the year. Work in the "A" district (which was formerly the principal workings to the rise) has been confined to taking out the pillars, which will soon be exhausted. Some of the coal left in near the outcrop is thin, and will not pay to work. In the "B" district (to the dip) the work carried on has been chiefly directed to taking out pillars, which are nearly worked out. The "C" district (to the north of the workings mentioned), which was termed a new discovery last year, has opened up much better than the manager anticipated. The seam of coal has averaged 4 ft. 6 in. in thickness, and it is from this section that the largest part of the output has been obtained during the year. An average of forty-eight men have been employed, and the output of coal for the year was 18,017 tons, a slight increase on the previous year's production. A plentiful supply of props, &c., is always on hand at the mine, and every care is taken for the safety of the men. The ventilation was good when the mine was last inspected.

Kiripaka Mine.—The work in this mine has been confined to drawing pillars, which are rapidly becoming exhausted, although a larger amount of coal has been obtained from the pillars than was expected. This was partly owing to careful management and the use of a large quantity of props and other timber. There are now only a few pillars standing near the entrance of the adit level, which will soon be worked out, and should a new discovery not be made outside of this portion of the property the output will soon come to an end. An average of thirteen men have been employed, and the output of coal was 14,138 tons.

Union Collieries, Limited (late Maramarua-Miranda).—This mine was worked in a small way by Mr. William Tattley up to the month of June, when it was formed into a company, Mr. Tattley being retained as manager. Attention has been directed towards developing the mine and installing additional plant and machinery to enable the output of coal to be increased and handled more economically than hitherto. Since the company was formed several new cottages have been built near the mine for the workmen to reside in; another new horizontal Tangye boiler of 25-horse power has been placed in position on the mine; three new barges have been built, of a carrying-capacity of 57 tons of coal on a 3 ft. 6 in. draught, for conveying the coal by water from the mine to the Government railway (a distance of eleven miles), where a new wharf and railway-siding are in course of construction. The operations in the mine are still of a limited nature, and will be until some of the things mentioned are completed, the work being confined to opening up what appears to be a promising area of coal between the old Miranda Coal Company's winding-shaft and Foote's old workings. A good deal of trouble was experienced in dealing with the water, which percolated through the coal from the old workings referred to. It has now, however, been

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drained off in Foote's section; but there is yet a considerable amount of water in the old Miranda Company's shaft which will have to be dealt with as the workings are extended to the dip. An average of seventeen men have been employed at this mine, and the output of coal was 3,923 tons during the year. The mine was inspected twice during the same period, and was found to be safe and the ventilation good.

Mangapapa-Mokau Mine.—It was fully expected that this mine would have been worked more energetically by the new syndicate than it had been done in the past, but there has been very little improvement in the working of the mine, and only a very slight increase of the output of coal over the previous year. There has always been a considerable amount of trouble in getting the mine-manager to carry forward the ventilation, also to work the levels and bords uniformly, and thus avoid encroaching on the pillars. In some instances one bord will run into another, leaving a triangular pillar, and this, together with a seam of stone in the centre of the seam, varying from 3 in. to 1 ft. in thickness (which keeps fritting away), makes the pillars of no use for the purpose for which they are intended. However, a change in the management is taking place, and no doubt some of the things that have been complained about will receive more attention in future. An average of fifteen men have been employed, and the output of coal for the year was 4,250 tons, an increase of 737 tons over the previous year.

Taupiri Coal-mines (Limited).—This company's operations during the year have been directed to the extension of the various works that were in progress at the end of last year.

In the Taupiri Extended section thirty-two men were employed for the first six months of the year, but latterly only eight men were employed. The work has consisted chiefly of opening up and developing the mine on that portion of the property situated on the west of the air-shaft and under the Waikato River. A large quantity of coal is now opened up, but, as sufficient coal is being obtained from the other sections to supply the demand, there has been no necessity to push on work here for the present.

Taupiri Reserve: The work carried forward in this section has been directed in extending Nos. 3 and 4 levels and working the bords from them, but the management has decided not to extend the No. 4 level in a north-westerly direction any further for the present, and contemplates opening up the coal lying to the north-east of the main adit incline from No. 4 level.

Ralph's Taupiri: In this section the work is now confined to extending the levels and workings on the company's property on the western side of the Waikato River, the coal obtained from here being of excellent quality. It has been proved by boring that there is a large area of coal in the direction they are at present working, which will enable the company to supply the market for a considerable time to come. In this section the men have been riddling the coal in the workings. This practice has caused considerable dissatisfaction, and frequent complaints have been made to the manager. The company have consequently decided to erect a new screening plant, which has been imported from England, and is now being erected on the surface between the shaft and the Government railway-line. This will be a very complete plant; but, owing to the bank-head being too low to enable the screening to be done by gravitation, elevator-belts will be used to carry the coal to a sufficient height, so that it can be cleaned and separated into four classes.

The average number of men employed by this company on the different sections has been 173, and the output of coal for the year 89,263 tons, an increase of 13,521 tons as compared with the previous year.

Harrison's Taupiri Mine.—This mine is situated on the outcrop of Ralph's old workings, and as the coal available was only confined to a small area it soon became exhausted, and has been closed down for some time.

Drury.—Mr. Wallace had some men prospecting for coal on the Hinua Range in the early part of the year. The seam of coal was cut through in several places, where it was found to be from 4 ft. to 4 ft. 6 in. thick, but as capital was not forthcoming to further develop it the work was stopped.

Ohinemuri.—There was a little work done on the coal lease granted on the Waihi side of the Karangahake Gorge, but as no coal was discovered the work was stopped, and I am informed that the lease will be surrendered.

The total output of coal won from the mines in this district for the year ended the 31st December, 1902, amounted to 192,045 tons, an increase of 16,961 tons as compared with the previous year, made up as follows:—

	Output for 1901. Tons.	Output for 1902. Tons.	Increase. Tons.
North of Auckland ...	... 87,055	92,761	5,706
South of Auckland ...	... 88,029	99,284	11,255
	175,084	192,045	16,961

ACCIDENTS.

The following are the names of persons injured in the mines north of Auckland who sent in claims to be placed on the Coal-miners' Relief Fund, the number of days they were absent from work, and the amount of money received: William Sillicks, West Bryan's, foot injured, 8 days, 16s. 8d.; James McCormick, Ngunguru, strain, 12 days, £1 5s.; B. Cusini, West Bryan's, hand injured, 35 days, £3 12s. 11d.; Thomas Fife, Ngunguru, finger broken, 12 days, £1 5s.; James Blue, Phœnix, arm injured, 14 days, £1 9s. 2d.; Richard Hamilton, Hikurangi Coal Company, finger injured, 16 days, £1 13s. 4d.; Adam Girvan, Hikurangi Coal Company, head injured, 78 days, £8 2s. 6d.; Charles Skeels, Phœnix, sprained ankle, 12 days, £1 5s.; Thomas Hopkin, Ngunguru, bruised leg, 23 days, £2 7s. 11d.; Herbert Hutton, Northern Colliery, bruised hand, 14 days, £1 9s. 2d.: making a total of 224 days, £23 6s. 8d.

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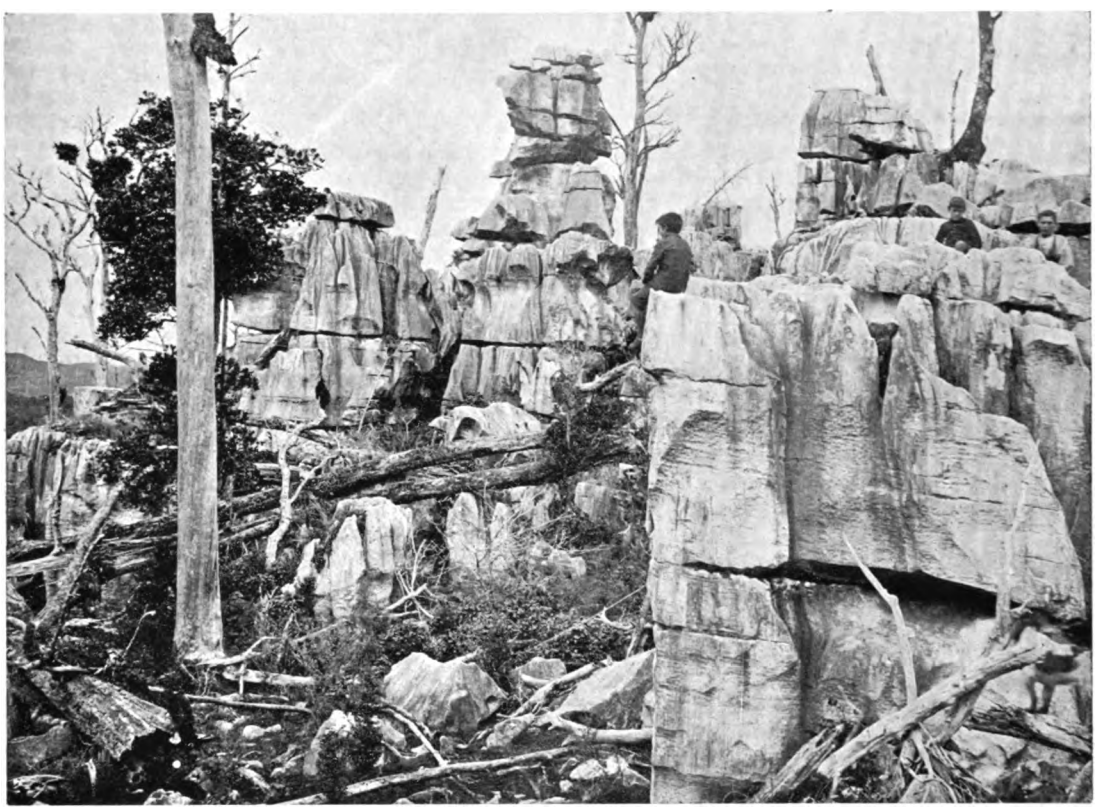
Railway-siding, Hikurangi Coal Company's Mine, Hikurangi.



Face p. 10.] Sub-crystalline Rocks overlying the Coal-measures at Hikurangi, near Whangarei.

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Only one case calls for special remark—viz., that of Adam Girvan. He was assisting to fill wagons on the railway when he slipped off the top of a loaded truck on to railway-line, seriously injuring his head, and was off work seventy-eight days.

In the mines south of Auckland (Huntly) thirty-seven men were injured, and were absent from work 540 days, the sick-pay from the Relief Fund amounting to £56 5s. This money was paid through the Waikato Medical and Accident Society, who also pay an equal amount to the miners in terms of clause 6 of the amended regulations for the management and administration of funds and moneys under section 69 of "The Coal-mines Act, 1891."

There were no fatal nor yet what might be termed serious accidents in this district during the year.

I have, &c.,

JAMES COUTTS,

Inspector of Mines.

The Under-Secretary, Mines Department, Wellington.

No. 3.

Mr. ROBERT TENNENT, Inspector of Mines, Westport, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,— Inspector of Mines' Office, Westport, 17th March, 1903.

I have the honour, in compliance with section 67 of "The Coal-mines Act, 1891," to report as follows on the West Coast coal-mines for the year ending 31st December, 1902:—

Enner Glynn Coal-mine.—(26/12/1902): Trask and Hurly's syndicate are sinking a prospecting-shaft on ground owned by James Newport, situated on the north bank of Brock Street Valley. The shaft, 5 ft. by 3 ft., was sunk to a depth of 15 ft., and timbered throughout. Wise and Bennett, late of Enner Glynn Coal-mine, put down a shaft in the same locality about two years ago, with unfavourable results.

Belgrove Prospecting Syndicate.—(15/12/1902): During my last visit two men employed on behalf of a Wanganui syndicate were prospecting at the foot of the hill country which forms the eastern boundary of the Wai-iti Valley, about seven miles southward of the Belgrove Railway-station. The party had driven a crosscut 15 ft. through a series of crushed coaly and foreign matter, which was cut off by a strongly defined wall of roof-formation. Other surface works disclosed nothing of an encouraging nature. It is understood that operations have since been suspended.

Motupipi Coal-mine.—(19/8/1902): A small trial shipment of coal was sent to Wellington, but nothing further has been done at the mine.

Shakespeare Bay.—For some time past prospecting has been periodically carried on by a local syndicate, but operations are at present suspended.

Taitapu.—Mr. N. L. Buchanan, attorney for the Taitapu Gold Estates (Limited), has recently directed his attention to prove the extent and quality of a coal-seam located on the west bank of the Paturau River, and about five miles south of the West Wanganui Inlet. The thickness of the coal-seam as proved in two different faces is 12 ft. The analysis by Dr. Maclaurin, Government Analyst, is as follows: Fixed carbon, 41·40; hydrocarbons, 40·25; water, 5·65; ash, 6·70. This is a good caking coal, forming a fairly hard coke. The sulphur is very low, and, although the ash is somewhat heavy, the coal is good.

Pakawau Coal-mine.—(17/12/1902): This mine is not now working. Some tunnelling and ditching were recently carried out by a prospecting syndicate, but, so far, further developments have not been effected.

Puponga Coal-mine (owners, Puponga Coal Company; Mr. Sydney George Hayward, attorney for the company).—(17/12/1902): Owing to certain differences having arisen between the late attorney and the company, progressive developments have been temporarily suspended. Mr. James Bishop, consulting engineer and acting-manager for the company, has recently drafted plans and estimates for the construction of haulage tram-line and loading-jetty. These works are intended to be put in hand at an early date. A contract has been let to drive the low level in the "Annie Taylor" section of the property. Five men employed.

Cape Coal Prospecting Syndicate.—Nothing further has been done on this property since report of last year.

Mokihinui Coal-mine (Westport Co-operative Coal Company).—(5/11/1902): Operations have been confined exclusively to the extraction of pillars in both sections of the Hut seam, the district being bounded east and west by fault-lines. Subsequently to total exhaustion of the lower pillars, the pumps were withdrawn, natural drainage being available for the upper districts, which at time of writing are wholly exhausted. Regarding the fire in the exhausted Big Face area, there is practically no notable change, the fire having assumed a smouldering condition. Reports are kept to date, and absence of accidents has been a marked feature during the year.

Seddonville Colliery (A. B. Lindop, manager).—Regarding the development of this "State coal-mine" property, the various works in connection therewith are being energetically pushed forward, and gradients affecting endless-rope-haulage requirements (conformable with the undulated contour of the country) are being carefully determined in order that economy and reliable operative results may be ultimately obtained. The rock tunnel, efficiently timbered to 10 ft. by 7 ft. in the clear, is making satisfactory progress, the driven distance on the 31st December being about 12 chains, leaving a further distance of 12 chains or thereabouts to cut the coal-seam. The formation met with in the tunnel consists of an unbroken intrusion of fine-grained granite, which has afforded favourable conditions for driving. Efficient ventilation is induced by fan, driven by oil-engine. The ventilating-shaft, now down 60 ft., is presently suspended, awaiting the erection of steam winding machinery, which is now under construction. Other important works are receiving prompt attention.

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Mountain Colliery (owners, Westport Coal Company; George Fletcher, mining manager).—[illegible] In point of productiveness and general efficiency the developments as originally planned on the northern area of this colliery have been worthily and consistently maintained, and the present trade demands which necessitate continuance of double shifts is sufficient guarantee in itself to prove the suitable qualities of the coal for export or otherwise. The increase of output was 29.37% as compared with the preceding year: total output for 1902, 276,750 tons.

Mine Creek.—The underground development in connection with this area has already attained important dimensions while the East and West winning-headings continue to be actively pushed on, showing an unbroken face-line of active operations and splendid quality of coal. From a commercial and economical standpoint one of the most prominent features which nature has afforded for the working of this coal-seam is its suitability for coal-cutting machinery, which is now extensively employed, compressed air being the power used for all underground mechanical appliances in the colliery. Timbering of faces and roadways is diligently and efficiently performed by the company's officers. The East dip south working has been exhausted to boundary fault-lines; its operations are confined exclusively to the extraction of pillars by miners, exceptional care being demanded on the part of workmen and officers to avoid risk in the removal of these thick seam pillars. Probably the most notable feature in connection with recent development is the adoption of a system of ventilation now permanently established. Prior to the alterations effected the air-currents circulating the whole areas were controlled by a "Scheile" fan situated at Mine Creek. This installation has recently been supplemented by a "Hayes" fan, 9 ft. 6 in. diameter, placed near the entrance to No. 1 mine, which circulates at a speed of 145 revolutions a constant air-volume of 60,000 cubic feet per minute, with a water-gauge reading of ⅞ in. The principle involved practically provides for the ventilaion of two separate mines, whereby direct intake currents are distributed into the respective ventilation districts. The duty of each fan is therefore directly confined to its own division of workings, separated by 35 chains of haulage-road. Brickwork has been exclusively used for stoppings and air-crossings in Mine Creek area, and the intake currents are taken through adit tunnels direct from day. The aggregate circulating ventilation averages upwards of 120,000 cubic feet per minute. A fourth boiler of the Babcock and Wilcox type will shortly be added to the plant. Electric light is installed in all surface works. Reports and other provisions of the Act are strictly kept up to date. Eight inspections were made during the year. The disused workings were travelled and examined with safety lamp, and were found clear of gas, thoroughly ventilated, and in good order. At time of writing, contracts have been accepted for the construction of a main haulage-road between the "big brake" and Mine Creek workings, at an estimated cost of £12,000.

Denniston Collieries (owners, Westport Coal Company; J. Dixon, mining manager).—In the matter of coal-production these mines have maintained their efficiency during the annual period just ended. The gross tonnage mined therefrom contributed 243,336 tons, being an increase of 17,143 tons over the preceding year. Of the tonnage mined, 74 per cent. is due to percussive pick-machines actuated by compressed air, while the remaining 26 per cent. was won by miners at tonnage rates.

Coalbrookdale Mine (29/10/1902): No change of practical importance has taken place during the year. With the exception of a few places to the west of Cascade section, where the coal-seam has diminished in thickness, the general contour of the faces maintains a fair height and usual good quality of coal. In further extension of operations, and in view of winning the coal in the Wareatea lease, a special place has been started on a southerly bearing, which, when completed, will probably be utilised eventually for endless-rope-haulage purposes. It is in contemplation also to sink a shaft in connection with the solid workings, in view of securing reliable ventilation whilst pillar-extraction is progressing.

Munsie's: The solid workings are practically finished to the outcrop east of the rope-road, operations being now confined to the extraction of pillars. A dip is now being driven to the south-east, and, so far as developments have extended, height and quality of coal-seams have proved that future results may be considered encouraging. Drainage and haulage are effected by mechanical appliances actuated by compressed air, the power being conveyed from the Coalbrookdale installation through a pipe-line 40 chains in length. Ventilation is induced by fan at the Cascade Mine, and by furnace at Munsie's.

Ironbridge Mine (30/10/1902): The development of the Dundee dip section is proving satisfactory. Downthrow faulting has, however, recently intercepted the dip-heading face, whereby the coal-seams are displaced some 26 ft. Meantime, crosscutting of the fault-line has been postponed, awaiting connection with the drainage-tunnel. This connection was recently effected, and development is now in progress to win the lower measures. The drainage system established to unwater the deepest sections of the Ironbridge workings commenced from the north bank of the Waimangaroa River. Prior to the holidays temporary connection with the workings was effected by an uprise from face of rock tunnel, at a driven distance of 28 chains. By this means two pumps were directly relieved, while siphons are in temporary use to drain the dip. To finally reach the lowest calculated level the tunnel will be driven a further distance of 10 chains, as exhaustion of the pillar areas now standing depends wholly on the successful completion of the drainage scheme.

Big Pillar District: Extraction of these valuable pillars has been successfully dealt with, as regards both safety and economy. The great thickness of coal-seam necessitates special care on the part of workmen and manager to avoid danger.

Kiwi: The solid and pillar sections of this district are exclusively worked by miners. The mine is well timbered and ventilated.

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Extensive tunnel and bridge works are in progress to deviate the Ironbridge main haulage-line from a given point in the mine to a central loading-station on the Coalbrookdale main line. This conjunctive system of loading and hauling is calculated to simplify operations and maintain a more uniform and increased output; but more powerful machinery will be required. Further, in addition to the present working-fan, a ventilating-shaft 86 ft. in depth by 100 square feet in area is sunk and connected with the main dip works. A 7 ft. diameter "Schiele" fan is in course of removal and re-erection.

Reports and other provisions of the Act are strictly attended to and kept to date throughout both the Denniston collieries; also, more extensive systems of ventilation are steadily proceeding. During the year six inspections have been made of the collieries. No serious accidents have occurred.

Mr. Dixon kindly furnishes the following: Since keeping a record of shots fired from the 1st September to the 31st December, 1902, the facts are as follows: 18,903 shots fired; coal won as a result, 81,662 tons, yielding an average of 4·32 tons per shot. In addition there were 110 shots fired in stone. The percentage of miss-shots was satisfactory, being only 0·24 of a shot per hundred. This is exclusive of all our blasting in water-drive and deviation work, and therefore refers solely to coal-winning.

Coal Creek Coal-mine (George Walker, lessee).—(4/12/1902): The lessee has intrusted the working of this valuable property to two miners, who take a special interest in the safety of the mine, and procure a first-class coal, suitable for household or steaming purposes. The coal is chiefly used for dredges on the Buller River.

Whitecliffs (Job Lines).—(4/12/1902): Owing to non-demand for the coal the mine has been shut down during the past six months, otherwise the mine is in good order.

Flaxbush Coal-mine.—(3/12/1902): There are three miners employed getting steaming-coal, chiefly for the supply of Mokoia and Feddersen's dredges. The thickness of coal-seam varies from 2 ft. to 2 ft. 6 in., and, being highly inclined, is worked in a similar method to a quartz reef. Timber is freely used, and ventilation maintained by rises direct to the surface.

Langford Coal-mine.—Further effort has not been made to reopen this mine.

Bourke's Creek Coal-mine.—(13/10/1902): In consequence of the rise pillar-working being totally exhausted to the mine-mouth, output of coal has been suspended for several months pending fresh development. The lessees, however, have recently reopened their low-level rock adit in view of working the deeper areas.

Archer's Freehold.—(16/10/1902): With respect to the working on this property there is practically no change of importance, mining operations being confined to the adit level, while ventilation is carried forward by rises driven direct to the surface as the face proceeds. Output has increased materially as the superior quality of the coal secures a ready market, the small coal being used on the local dredges.

Coghlan's Freehold.—(16/10/1902): This mine was recently opened near the cap of the hill, and the coal conveyed by a self-acting incline to the main road. Quality and thickness of coal-seam are similar to those on Archer's property.

The Crown land property recently disputed between Archer and Coghlan is not being worked at present.

Lockington's Leasehold, Bourke's Creek.—Regarding the progressive stage to which the development of this leasehold has attained, it may be said that construction of tram-lines and driving of rock tunnel to win the coal-seam are practically carried out on the deferred-payment system, as the works stated were at a standstill, the miners having struck work on the morning of my visit. According to Mr. Lockington's statement, 12 chains of tram-lines and 100 ft. of rock tunnelling are required before the coal can become a marketable product.

Blackadder's Leasehold, Reefton Town Belt.—The development of this leasehold comprises a rock tunnel, driven from the eastern boundary, intersecting the coal-seam at a distance of 100 ft., but further operations have been suspended in this direction pending the results disclosed from the western side. Unfortunately the western slope of the Town Belt forms a huge slide, and, although driving has been extended 285 ft. into the hill, solid country has not yet been met with.

Murray Creek Coal-mine.—(14/10/1902): Notably, the change which transfer of ownership has effected in the development of this open-faced property reflects credit on the present owner, as some thousand tons of valuable coal has been mined and utilised for steaming purposes at Murray Creek battery. This mine was formerly worked for household fuel only, the small coal being sluiced into the creek for want of a profitable market.

Phœnix Coal-mine (John Knight, owner).—(14/10/1902): In view of extending the low-level district of working to connect with the originally worked rise districts, the fault-line intersecting the lease has been cut in order to facilitate trucking and ventilation. Effective ventilation is carried forward by holings into the rise level. These workings are in good order, and the coal, which is of superior quality, finds a ready market.

Lankey's Creek Coal-mine.—Nothing further has been done on this leasehold since the claim was "jumped."

New Inkerman Coal-mine.—Stoping is continued on the adit level, and the coal is used exclusively for steaming on the gold-mining company's property.

Dent's Creek.—(14/10/1902): This lease was surrendered recently.

Progress New Mine.—(14/10/1902): The supply of steaming-coal for the company's works has been chiefly won from pillars which are now nearing exhaustion. Provision is made, however, for the maintenance of output from a newly opened section of the lease. Timber is freely used, and the removal of pillars is effected without loss.

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Loughnan's Coal-mine.—(14/10/1902): Construction of dray-road and tram-line has been continuous, to admit of working the coal-seam on the new leasehold, conditions and quality being favourable.

Burning Coal-seam at Boatman's.—The Mines Department having granted authority to extinguish the fire, the drainage of the *pakihis* and Flower's Creek was speedily effective, and the full supply of water turned into the burning mass, which when visited (26/1/1903) was practically extinguished. Owing to the excessively dry season the water-supply has not been constant.

Blackball Colliery (owners, Blackball Coal Company, Limited; James Leitch, mining manager).—(25/11/1902): Notwithstanding the disadvantages incidental to the removal of pillars under soft friable roof, coupled with the varied difficulties experienced in the early part of the year from underground fires resulting from spontaneous ignition, the output has been exclusively from the extraction of pillars. This is the highest recorded for any annual period, showing an increase of 20,446 tons over the preceding year, and a proportionate excess of tonnage as compared with the original calculations for area exhausted. Previous to the removal of pillars, outbreak of fire in the solid working was suppressed generally by water under heavy pressure; but subsidence of the strata eventually cut off all means of water-supply as the exhausted areas gradually retreated homeward. Under these conditions a continuous system of walling was necessarily enforced, whereby the heated areas were effectually sealed, these precautions being effected by crib-log and stone-built stoppings packed between the walls with loose clayey matter to a width of 15 ft. Fortunately, the system adopted has not only proved effective in suppressing further spread of fire, but any resultant gases exuding through the stoppings are diffused without any perceptible detriment to the ventilating-currents.

Dip Area: Mechanical and other preparatory works in connection with the development of the dip areas are now engaging the attention of the management, in order to maintain the output as the pillars in the rise workings become exhausted. These works are now in a progressive stage of efficiency, and a coal-seam of splendid quality has been exploited to a distance of 350 yards to the dip of the main level. In addition to the progressive works stated, increased facilities for haulage and ventilation will be provided by a duplicate rock tunnel 10 ft. by 7 ft. in the clear—driven on an angle of 10°—to strike the coal-seam at a calculated distance of 9 chains, at a point half a chain west from the parallel of the present haulage-tunnel. On completion of the haulage, pumping, and ventilation installations the dip headings will be vigorously driven to the boundary, on 1-in-12 gradients, to a distance of 110 chains, whilst the upper developed top-seam section will be opened out and worked on long-wall principles. This projected line of development will enable the company to work the field homeward from the dip boundary, and thus provide approved precautions against the possibility of fire from spontaneous ignition. The endless-rope-haulage installation, capable of raising 500 tons per day of eight hours, is early expected from England. These engines comprise 15 in. diameter double cylinders, with 30 in. stroke, fitted with all the latest devices and improvements relative to modern haulage. Boiler and electric pumping installation are complete. Reports to date and other requirements of the Act are strictly enforced. Systematic timbering is made a special feature in the workings. Seven inspections were made during the year. No serious accidents reported.

Brunner Mines (R. Alison, mining manager).—Although these mines have worked single shift during the whole year under gradually exhausting pillar areas, output has been steadily maintained, showing a gross tonnage of 116,714 tons. John Coulthard is now responsible mine-manager for the whole area.

Brunner Mine (14/11/1902): Apart from the ordinary routine of operations in opening out the old disused headings in order to exhaust the pillars effectively, fresh developments at this colliery are events which practically belong to bygone days, as output is, and has been for several years past, exclusively from pillar-extraction. In fact, the question arises, how has the mine kept going so long? The colliery has certainly had a longer life than it was credited with some years ago, but this is due principally, if not entirely, to the fact that soft coal, which was originally left standing in pillars for want of a market, has within the last few years attained a commercial value. It is owing to the careful extraction of these pillars and sending out loose coal and slack formerly left in that the output has been so long maintained.

To further extend the present dip working and win the pillars direct to the goaf of the original dip, a low-level water-channel was driven from the edge of the river, by which the desired area has been efficiently unwatered to a depth within easy access of the haulage; also, in the rise districts facilities have been further provided to carry out the continuous exhaustion of the Ladysmith and Coolgardie districts conjointly. The bank-head, with the usual brake appliances, was recently shifted down to a lower level on the self-acting incline. The timbering of this incline tunnel has been thoroughly overhauled and put in good repair. Ventilation, induced by a "Scheile" fan over the whole areas, gives an average reading of 20,000 cubic feet per minute. Reports are kept to date, and there were no serious accidents. Seven inspections were made.

Tyneside Colliery (James Armstrong, mine-manager).—This old pit was recently unwatered and opened out, the workings standing in the same good order as when shut down. Screening, loading, and other surface plant are nearing completion. There were six colliers getting coal when the mine was last inspected. Travelling-road to the workings is provided by adit tunnels. Coal is raised through a brick-lined vertical shaft 90 ft. in depth.

Point Elizabeth State Coal-mine (A. B. Lindop, manager).—The operative mining developments comprise the driving of Nos. 1, 2, and 3 rock tunnels in view of winning the main or exhibition coal-seam; while the No. 4 tunnel started recently on the north bank of the Seven-mile Creek is calculated to win the upper seam. Regarding the regularity of thickness and quality of the last-named seam, reliable data are afforded in the coal-tunnel opened and worked by Kane on the

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western boundary of the coalfield. Driving of Nos. 1, 2, and 3 tunnels is through compact marine deposit, the sides and roof of which practically insure absolute safety without the aid of timber. Ventilation is induced efficiently in Nos. 1 and 2 drives by fans driven by oil-engines, and at No. 3 by water-blast. The railway-works have furnished employment to a considerable number of men, while attention is being directed to determining the various sections of haulage tram-line. Reports are kept to date.

Kane's Coal-mine.—Cancellation of this tunnel license under the Mining Act was granted at the Warden's Court, Greymouth, on the 1st December, 1902.

ACCIDENTS AND FATALITIES.

Brunner Mine.—(8/1/1902): Edward Smith sustained fracture of leg by fall of coal at face. (9/1/1902): Charles Seaton sustained fracture of knee while turning his truck on a flat-sheet.

Millerton Mine.—(10/1/1902): Charles Murray had his thumb bruised while undoing a haulage-clip. (15/5/1902): John Prout sustained internal injuries whilst lifting a heavy cap-piece. (10/7/1902): Edward Callaghan had his little finger bruised (necessitating amputation) by a truck up-ending. (11/7/1902): Mark Fraser, while jigging a loaded truck, sustained fracture of right leg by chain dragging it against the brattice-prop. (20/8/1902): Whilst Thomas Mitchell was running out a loaded truck from the foot of west incline heading, a running truck, striking him on the knee, inflicted injuries which terminated fatally on the 3rd December, 1902. (28/8/1902): Whilst Joseph Kennedy was clipping the loaded trucks at Mine Creek haulage terminal he was jammed between two full trucks, causing injuries which terminated fatally two days after. Verdict: "Accidentally killed."

Denniston.—(11/9/1902): William McFarlane, winchman, sustained fracture of the skull by winch-handle reversing on the middle brake, Denniston incline; injuries not serious.

GENERAL REMARKS.

Comparing the ratio of production and consumption from industrial and commercial standpoints, it may be said that the principal factors which have contributed to increased production are the rapidly increasing export trade to oversea ports, and the increased industrial activity and steady growth of population. Stimulated by these facts, the Westport Coal Company are actively pushing progressive development in drainage, haulage, and ventilation, conducive to further increase of output with economy and safety; whilst the Blackball Coal Company are expending largely in procuring up-to-date plant in order to develop their extensive dip areas. The system adopted by the latter company to win these areas is to drive the winning-headings direct to the dip boundaries and exhaust the field homeward, thus minimising the risk of spontaneous ignition.

It is satisfactory to note that the gross tonnage (753,816) raised from the West Coast inspection district, compared with the preceding year, shows an increase of 84,281 tons. A review of the potentialities of the active producing centres justifies the prediction that, unless existing conditions are changed by unforeseen causes, the increase in the rate of production will be continued throughout the present year.

I regret to report the death of two young persons from accident in Millerton Colliery.

FOREIGN TRADE.

Westport Coal Company shipped 52,740 tons to ports outside the colony, being an increase of 20,504 tons on the preceding year.

I have, &c.,
R. TENNENT,
Inspector of Mines.

The Under-Secretary, Mines Department, Wellington.

No. 4.

Mr. E. R. GREEN, Inspector of Mines, to the UNDER-SECRETARY, Mines Department, Wellington.

Office of Inspector of Mines (Southern District), Dunedin,
30th March, 1903.

SIR,—

In accordance with the requirements of section 67 of "The Coal-mines Act, 1891," I have the honour to transmit the following report on the coal-mines in the Southern District for the year ending the 31st December, 1902:—

CANTERBURY.

Springfield Colliery, Springfield (J. Taylor, permit).—(15/9/1902): Since last visit a creep has occurred over the northern section of workings, where pillars had been partially robbed. The lower level and air-shaft at bottom being affected, timbers crushed by squeeze are being renewed. Only fireclay and coal for the pottery-works being won. (9/10/1902): The recent crush now almost settled. A new road is being cut through the pillar to air-shaft bottom, also new travelling-road and airway being made through old workings to the rise from Campbell's heading. Ventilation throughout the mine fair.

Victoria Mine, Springfield (Luke Greening, permit).—(15/9/1902): The cross-measures drive cut a 4 ft. seam of coal, having an 18 in. band in the middle. The seam is being worked long-wall, and the band forms convenient stowing. The dip is being driven in fireclay of good quality, the clay being railed to Christchurch for manufacturing purposes. Mine well timbered and in good working-order.

P. Campbell and Son, Springfield (P. Campbell, permit, manager).—(15/9/1902): Reopening Jackson's *Eureka* Mine, which was closed many years ago. The dip incline is 3 chains to the face, but the coal-seam is only from 18 in. to 23 in. in thickness, and is being worked long-wall. On the east side of the dip the coal is altered and cut out by a basaltic intrusion. Mine well timbered and air good.

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Homebush Colliery, Glentunnel (manager, J. C. Campbell).—(16/9/1902): The new dip off the main haulage level is down 5 chains to the face in coal of excellent quality. Pillars in the old mine continue to be skilfully extracted, from 90 to 95 per cent. of the seam being won. Timber used in abundance, most of which is drawn and used again. The false roof in some of the places requires and receives close attention. Through long experience the men are well aware of the nature of the roof, and, exercising due care, accidents are rare. (10/10/1902): This visit was paid in consequence of an accident to John Marsh (bruised shoulder and arm by a fall of coal from side of pillar on the 30th ultimo). Marsh had been wedging a fall of coal from the pillar when a lump came away from a false back, inflicting injuries mentioned. Timber plentifully used.

St. Helen's Colliery, Whitecliffs (H. Levick, permit).—(16/9/1902): The new low level at 73 yards cut an 8 ft. seam of coal, thus giving the place a new lease of life. A half-yard band of dirt in the centre of the seam provides convenient stowing, coal being worked on the "blocking-out" system. Levels in the seam are driven right and left, and a rise drive to surface provides for return airway. (10/10/1902): The 8 ft. seam thinning to north. Mine well opened, and almost the whole of the seam being extracted; levels being driven to boundary of district, and coal blocked out coming back. Timbering efficient; air good.

Brockley Pit, Glenroy (Henry Lee, permit).—(16/9/1902): The south level had been driven 70 yards to a roll and stopped; the north level is driven 25 yards; average thickness of seam, which is vertical, 3 ft. Timber, having been light in first instance, has proved inadequate to withstand pressure from sides, and is being renewed gradually. An uprise for air is 40 ft. to the surface.

MacFarlane's, Staveley (Llewellyn John).—(15/10/1902): Two trial drives on north bank of Taylor's Stream had proved failures. Prospecting-drive on south bank is in 174 ft. in vertical measures, abutting limestone formation. Strata passed through, dark clays with bands of sandy clay and running sand. Drive well timbered. Coal, when found, is required for lime-burning purposes.

Mount Somers Coal-mines, Mount Somers (Andrew Thompson, manager).—(18/9/1902): No. 1 or old mine: Only one man now employed here getting steam coal. I had to draw the manager's attention to the careless manner in which blasting-powder was being handled. No. 2 mine: The levels are being pushed on in good, clean coal, bords off same being worked 8 ft. to 10 ft. high, coal being strong; roof standing well. Dip of seam, south 1 in 4½. Air-shaft for return required. Owing to second outlet being on same level with intake and natural ventilation only, air-current comparatively stagnant.

Orr and Harris, Mount Somers (John Harris).—(18/9/1902): An area on Crown lands recently granted on the south bank of Chapman's or Woolshed Creek. Prospecting-drive is in 4 chains in a 5 ft. seam of coal alongside a "roll." The main seam has not yet been struck, but is expected to be found at an early date.

Rutherford's Mine, Albury (J. M. Willetts).—(19/9/1902): The old level is now used as a water-level, a rise crosscut being used for haulage-way, and a pair of headings being driven off it to communicate with an air-shaft to be sunk in the near future, original air-shaft being in a state of disrepair.

North Otago.

Awakino Pit, Kurow.—(10/7/1902): No one about. Mine-mouth fallen in. Coal has recently been taken from the creek-bed, where 4 ft. to 5 ft. of gravel stripping lays coal bare.

Shanks's Pit, Wharekuri (A. Shanks).—(10/7/1902): Heat and damp from lower levels (old workings) squeezing through the joints of the coal. The seam being vertical, although 40 ft. in thickness, only about one-third of the coal has been won.

Otiake Coal-pit, Otiake (Simpson and Cunningham).—(10/7/1902): The prospecting-shaft has collapsed, and is now filled up to the surface. An adit level (timbered) had been driven through sandy clay seams, and at 3 chains the coal-seam was struck, and found to be 18 ft. in thickness (vertical). Strike, north-west and south-east. An air-shaft is required, sinking about 60 ft. For many years no work had been done on this seam, which was formerly known as Porter's Pit.

St. Andrew's Colliery, Papakaio (T. Nimmo, permit).—(9/9/1902): Three men drawing pillars; mine well supplied with props. Main road and return airway to furnace in good order. Air good; report-book to date.

Prince Alfred Colliery, Papakaio (J. Willetts).—(9/9/1902): The pillars are now drawn back to the haulage-road, and this mine is nearly finished. Timber well set; air good. A prospecting-drive being put in to the adjoining hill is well timbered.

Ngapara Colliery, Ngapara (W. Nimmo, permit).—(11/9/1902): Manager absent in town for the day. Three men employed. Seam thick and strong. Mine in good order. Shots are now fired at the end of each shift, thus avoiding pollution of air formerly complained of.

McLeod's Kartigi (C. E. Twining).—(10/9/1902): Prospecting on the rising ground forming the northern bank of Trotter's Creek. Several small seams have been driven on, but not sufficient work yet done to prove or estimate the value of the field.

Shag Point Colliery, Shag Point (Thomas Shore, manager).—(17/2/1902): Water out at last, after five months' baling and pumping. The new under-sea seam is driven on 30 ft. to north side of level. Three new feeders were struck at intervals of 2 yards, making the total flow of water from the seam 24,000 gallons per hour by admeasurement. The roof to the seam is composed of quartz conglomerate, hard and solid, except for the cutters or joints whence the water flows. Water still strongly brackish. I examined the mine, and found that it had not been much affected by the flooding. Air good; plans and report-books to date. (8/4/1902): Proprietors having decided to discontinue operations, pumps and plant have been drawn, and dismantling operations are almost completed. Some of the plant is being removed to the Lovell's Flat Mine. (8/7/1902):

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Nothing doing here now. Water in shaft rising slowly, at the rate of about 5 ft. per week. Surface of water is at 220 ft. below sea-level. (10/9/1902): Negotiations pending for opening the old mine and winning pillars said to have been left in, and estimated to yield several thousands of tons of coal. (16/10/1902): New cross-measures drive started 2 chains west of main shaft, dipping inland at 1 in 4. Drive, 6 ft. by 6 ft., timbered. Spoil being tipped into shaft to strengthen bottom. (16/12/1902): Dip drive at 200 ft. struck the seam, which was found split by a stone band. A level is being broken away south, in expectation that the seam will make in that direction. Surface of water in shaft, 158 ft. from surface, or 116 ft. below sea-level.

Allandale Colliery, Allandale (A. S. Gillanders, manager).—(2/4/1902): Air at intake, 6,500 cubic feet per minute. No. 3 seam: Three pairs of men drawing pillars. No. 2 seam: Making uprise airway to No. 1 seam, and preparing to draw pillars. No. 1 seam: Long-wall workings on the south side and bord and pillar on north side of level. The seam is opening out on good coal. Air dull in two places, which would be through in two days, and free circulation established; otherwise air good throughout the mine. Timbering well attended to; roadways in good order. Trial bore on site of proposed new ventilating-shaft is down 214 ft. (8/7/1902), (C. H. Westfield, manager): Air at intake, 7,200 cubic feet per minute. No. 3 seam: Pillars nearly finished. No. 2 seam: Only a few men taking out the last of the pillars. No. 1 seam: Main body of the men in north workings. All places systematically timbered. Air good, except in No. 3 seam pillars. The main intake requires cleaning up a bit. The north level is gradually swinging round from north to north-east, apparently passing round the rim of an inverted basin. Thickness of main seam is becoming variable. At an upthrow fault on the north level coal pinches from 6 ft. to 2 ft. 6 in. (9/9/1902): Men idle to-day. Mine in good order all over. New air-shaft, 8 ft. by 4 ft. inside the timbers, is down 111 ft. (17/12/1902): New air-shaft, now completed, is 280 ft. in depth, and provides fresh air to the faces, the main engine hauling-plane forming upcast as formerly. Airways, travelling-ways, and working-places in good order. Rules posted; report-books and plan to date.

SOUTH OTAGO.

Fernhill Colliery, Abbotsford (James Gray, manager).—(18/4/1902): Working-places in good order; stoppings on old mine-workings tight and standing well. Mr. Gray is taking the precaution of driving narrow under the Silverstream Water-race. (3/9/1902): The new mine-workings being in the solid places are standing in good order. Surface "plumps" on the old mine area continue to increase in number and size, several being quite close to the Silverstream Water-race. Mr. Gray informed me that the Dunedin City Corporation were considering the matter of laying a pipe-line siphon to cut off that portion of the open race over the colliery-workings. This would be a decided benefit to all concerned. The fire in old workings is kept damped down. Stoppings in good order and well attended to. Thomas Gray, banksman, sustained fracture of left forearm on the 8th September while trying to prevent a box of coal tipping up. Gray could easily have stepped aside and avoided injury.

Freeman's Coal Company, Abbotsford (R. Hill, manager).—(18/4/1902): No. 1 mine: Work being gradually brought back toward the main dip; pillar-extraction being successfully conducted; roof in bottom places low, but safe, and well timbered. Air good; plan and report-books to date. No. 2 or new mine: Level face in 10 chains; back level kept well up. Air good. (3/9/1902): No. 1 mine: Robbing and retreating. A high percentage of coal has been won from this mine, which is now rapidly drawing to a close. Leakage of damp from the waste is considerable, and close attention is given to the ventilation of the working-faces, notwithstanding which the air in the bottom places was polluted to some extent, but was cleared in my presence by a rearrangement of the brattice. No. 2 mine: The level is now connected with Zander's shaft. Air excellent. This mine is being driven to open and work a block of virgin ground which had been well proved by the former workings. (23/10/1902): No. 1 mine: Only two pairs of men now working here, the few remaining pillars being almost exhausted. Air good. Rules posted; reports and plan to date.

Walton Park Coal Company, Walton Park (J. Kenyon, manager).—(4/7/1902): Old workings well stopped off with tongued-and-grooved wood stoppings kept well plastered with damp clay. The work consists entirely of drawing pillars and dropping head-coal, and is kept well outside the one-chain limit of the railway reserve. Air good at working-faces and on travelling-ways. (23/10/1902): Pillars continue to be drawn safely, the line of stoppings in front of the waste being well attended to. The safety barrier of 1 chain between the present workings and the railway reserve strictly maintained, otherwise all coal being drawn and the surface broken, cover being not more than 50 ft. to 60 ft.

Jubilee Colliery, Saddle Hill (J. Campbell, manager).—(2/9/1902): Mine-workings in good order. A new entrance having been made on the north side of the property, length of draw now considerably shortened. Timbering where necessary well attended to, and ventilation satisfactory.

Saddle Hill No. 1, Saddle Hill (W. H. L. Christie, manager).—(4/7/1902): Mine in good order generally, and ventilation satisfactory. The dip is being extended, and preparation made for obtaining pillar-coal from some old workings in the vicinity.

Saddle Hill No. 2, Saddle Hill (W. H. L. Christie, manager).—(4/7/1902): Air at working-faces not quite satisfactory, and a new upcast shaft is to be sunk at an early date. New tramway and railway-siding accommodation has been provided, and the proprietors are now in a position to place a considerably increased output on the market.

Burnweil Colliery, Saddle Hill (A. Harris, manager).—(13/5/1902): Recent heavy rains had caused flooding of the mine. Surface "plumps" in a hollow had allowed storm-water direct access into mine. Vertical steam-boiler and "Snow" pump having been placed in position, water is now overcome. The coal-seam is 20 ft. and upwards in thickness; roof strong and safe. Mine in good order; report-book to date.

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Glenochiel Colliery, Saddle Hill (D. Bryce, permit).—(13/5/1902): Work consists of robbing pillars and roof-coal in old mine. Damp from fire still troublesome, notwithstanding considerable area of roof fallen and sand down. New mine-entrance well timbered. Dip progressing slowly.

Mosgiel Colliery, Saddle Hill (James Sneddon, manager).– (13/5/1902): A "sit" occurred on the 9th and 10th instant, and the lower dip pillars became lost and pump buried, due, no doubt, to recent wet weather and water percolating through surface breaks where pillars had been drawn. Only a few roadside pillars remain to be worked consistent with safety, and the mine may be considered as nearly worked out. Report-book and plan to date.

Riccarton Coal Company, East Taieri (M. Neilson, manager).—(13/5/1902): Air at intake (7,500 cubic feet per minute) ample, but not conducted to faces. At 2½ chains from brow of dip a trough is met, and meantime the seam is rising against the general direction of dip. A local disturbance probably.

Lauriston Colliery, Brighton (J. R. Walker, owner).—(2/9/1902): Roof bad, and places being now driven narrow or timbered. Care exercised, and no risk taken.

McColl's Pit, Brighton (D. L. McColl, owner).—(2/9/1902): No one about. Mine-entrance locked. Only small amount of trade evidently.

Fairbairn's, Akatore, Taieri Beach.—A pair of levels are driven about 1½ chains, and stenton through. I can find no previous record of this pit, which the owner informed me had been worked in a small way for a number of years. About 450 tons altogether had been taken out for local requirements.

Bruce Mine, Milton (A. Young, owner).—(26/9/1902): Mine in good order. Not much doing.

Strip-and-at-it, Milton (N. Hardwick, owner).—(26/9/1902): Mine in good working-order, but trade insufficient to induce owner to continue working.

Fortification Railway and Coal Company, Akatore, Milton (A. Harris, manager).—(14/2/1902) The old mine return airway having become closed by a heavy fall, the men had been withdrawn and a contract let for winning coal from the new mine It appeared that the mine-manager, Mr. A. Harris, had been employing more than twenty men under his second-class certificate, and, a prosecution having been decided upon, the Magistrate inflicted a fine of £1, and costs £3 16s., for breach of the Act on the 15th January, and for a similar breach on the 24th January he was fined 10s., with costs £1 10s. The new mine will form a more convenient outlet to railway, which is rapidly nearing completion. Loading-bank, also hauling engine and boiler being erected. (16/6/1902), (Thomas Barclay, manager): The branch line from Milton Railway-station, five miles and a half in length, is now completed. New mine: The roof is tender in places, and wide bords require centre props. Steps are being taken to improve the ventilation. Brattices and air stoppings had been allowed to get into a state of disrepair, consequently air deficient in the far-in places. Return airway and upcast shaft in good order. (26/9/1902), (M. Straw, manager): The crosscut dip drive is being advanced rapidly and bords broken away. The coal is being worked to a parting 5 ft. from the floor, leaving a sound roof of 2 ft. of coal overhead. Sufficient timber not being used in the pillar-workings to the rise, but, a supply having come to hand, this defect would be remedied. Rules posted; report-book and plan to date.

Glenledi Pit, Milton (N. McGilp, owner).—(16/6/1902): No one about the mine. (26/9/1902): No one about, but a start has been made to get coal again from the old opencast face.

Adam's Flat Mine, Adam's Flat (J. Reid, owner).—(26/9/1902): 8 ft. of overburden being stripped preparing for the incoming threshing season.

Paskell's Pit, Adam's Flat (J. Paskell, owner).—(26/9/1902): Face fallen in. Coal has not been taken out for some time.

Wallsend Pit, Lovell's Flat (R. Hewitson, owner).—(18/6/1902): Stripping kept fairly well back from the face.

Lovell's Flat Colliery, Lovell's Flat (James Carruthers, manager).—(9/4/1902): Dip 400 ft. to face, in good coal. Roof in bords cutting, and timber freely used. North level in 15 chains; thickness of coal remains at 5 ft.; breast of work only 2 chains up to the soft coal, which is gradually cutting places out. North heading at 8 chains; coal not improving. South-level face is promising in appearance. Air good, and timbering well attended to. Plan and report-books to date. (20/6/1902): The fire in south-side old workings occasionally gives trouble, but is carefully watched and watered as required. As on the occasion of my last visit, the seam continues thin in north and south levels, and the dip prospects remain good. Ventilation good throughout. (25/9/1902): An air-flue with furnace has been built on the surface, leading from the mouth of the second-outlet shaft. Underground the dip workings, where most of the men are employed, are generally in good order. A large quantity of timber is used in the bords, and an adequate supply kept below for use as required. Rules posted, and report-books to date. A fire broke out on the pit-bank on Sunday, the 12th October, which destroyed the buildings, loading-bank arrangements, and pit-head framing. In consequence, the pit was closed for a few weeks while repairs were being effected. The cause of the fire has not been discovered.

Tuakitoto, Lovell's Flat (Dunlop, owner).—(20/6/1902): The ground landlord taking out coal for own use only.

Benhar Coal-mine, Benhar (James McLeod, permit).—(18/6/1902): Mine in good order. New dip workings in lower seam have been opened since my last visit. Coal strong and roof safe. Air good.

Mount Wallace Pit, Stirling (D. Shaw, lessee).—(18/6/1902): Extension of main dip being continued in strong hard coal.

Taratu Coal Company, Kaitangata (Joseph Shore, manager).—(28/8/1902): The company recently formed is prosecuting active operations. A branch line of railway eight miles in length is being brought in from Lovell's Flat Railway-station to the mine. Coal outcrops to the surface

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are frequent on the property, and two of these are being driven on to north and south side of main gully. The main south level is 5 chains to the face in coal all the way, bords being broken away to right and left, and an air-drive for return being driven to daylight. The seam is giving off water heavily. Fortunately the mine is self-draining. (12/12/1902), (H. C. Longstaff, manager; C. E. Twining, supervising engineer): Main south level driven 9 chains; seam practically level; roof being jointed; props are regularly set in bords. The north level, which is driven about 1 chain to the face, is standing at present. Boring operations are being conducted up main gully, eastward of present workings. The branch railway-line is completed, and the loading-bank is being erected.

Kaitangata Colliery, Kaitangata (G. H. Broome, manager).—(11/2/1902 and 13/2/1902): Air-volume at intake, 21,600 cubic feet per minute. McDougall's heading section: Robbing being well conducted. Air good. No. 4 dip section: North-going places stopped on No. 6 fault. In five places roof bad, and timber kept well up to the faces. No. 3 dip workings finished and winch removed. No. 2 dip section: Working-places, return airway, and main return airway to furnace, all in good order. No. 2 heading: Return becoming small, but owing to the angle at which No. 6 fault lies there is only a small corner of coal left to work out. (10/4/1902): Air at intake, 18,980 cubic feet per minute. McDougall's section: Robbed back to within half a chain from wheel. Drum-level section re-opened; also Penman's heading, where eight men are working on pillars. No. 1 heading: Four men on pillars. No gas. No. 2 heading: Four men. A little gas in Gribben's place. No. 4 dip: Drawing pillars on both sides of the dip. No. 2 dip: All on safety lamps, a blower of gas and water having been struck in the low level. Ventilation: Air warm in pillars in McDougall's section, otherwise fair throughout the mine. Timber: Adequate supply throughout, but required closer to faces in several instances. The fire behind brick stopping on main haulage-road is warming up at the old place, and is to be opened and watered to-night. (13/6/1902): A new cabin has been constructed on the main stone drive for deputies' use. McDougall's section now robbed back to the top of the heading. This work has been successfully conducted, but not without difficulties inseparable from winning the utmost from expiring workings. On careful computation it is estimated that about 85 per cent. of coal in this section had been extracted, a creditable record when it is considered that the seam averaged 30 ft. in thickness. The strong nature of the roof and the softening floor causing "heave" facilitated extraction of remnants of pillars. Large quantities of black damp generated (the product of incipient combustion) were retained by successive rows of stoppings which had been put in at regular intervals. Roof and floor now meet throughout the district robbed. A contract having been let, the stone-drive extension to crosscut the measures eastward is now being prosecuted, present intention being to cut Nos. 5 and 6 faults. No. 4 dip workings clear of gas. No. 6 dip has been started to win a patch of main seam to the dip of stone drive. Main return airway at No. 2 heading requires attention, otherwise airway to furnace in fair order. Brick wall cool, having been partially renewed by ash stopping. (17/6/1902): No. 2 dip: Blower decreasing in force, but water now a steady flow, and is no doubt the growth from shaft-workings. Gas making off soft and faulty coal at faces up against No. 2 fault. Air stoppings required on top level to force whole of current available round the faces of the working-places. J. Gadsby, miner, having inadvertently passed a lamp-station notice with a naked light on his head, the mine-manager subsequently laid an information for breach of Special Rule 74, when Gadsby, who pleaded guilty, was convicted, and mulcted in costs 7s. McDougall's heading section: Stopping on heading just finished, and the section now completely stopped off. North-section pillars on level being brought back. I could not find gas, but, it being occasionally reported, only safety lamps are being used. An ash stopping required at disused stables return to prevent loss of air by leakage. Owing to the comparatively large number of eye accidents from proud or flying coal, causing septic poisoning, the management have provided rectangular gauze protectors, about 6 in. by 5 in., to protect the eyes and faces of workmen; mesh equals 64 per square inch, bound with soft leather at bottom and top, and having tapes for fastening to cap or head. These protectors are served out by the deputies, and when not in use are hung on a prop convenient to the face. (18/6/1902): No. 2 dip: Stoppings having been put in top level, body of air now confined to circuit. Working-faces all clear of gas, which, as it makes, is diluted and conducted direct to the return. Examined north side, No. 2 heading districts, and return airway, which requires attention in places. A new underground magazine for explosives has been made at a convenient point off the main stone drive. (5/8/1902): Air at intake, 22,680 cubic feet per minute. McDougall's section finished; stoppings in, and now drawing pillars in the heading. North side: Nos. 1 and 2 headings will be finished this week and stopped off. All men on safety lamps in this section. No. 4 dip: Only three men now working in the bottom bord. Return airway from north side in fair order, two repairers being at work. The main return airway to furnace requires, and is receiving, attention. An explosives-magazine has been erected on the hillside, well away from the mine-mouth. Detonators are kept stored on the surface in a separate magazine. (2/7/1902): No. 2 dip workings clear of gas and in good working-order. No. 4 dip: Air dull in bottom bord. (27/8/1902): Air at intake, 21,600 cubic feet per minute. No. 2 dip: The coal in this district has ever been soft, and considerable waste resulted. Working-bords are now stopped off, and a few hard-coal pillars are being brought homeward. North section: Nos. 1 and 2 headings are stopped off at bottom. No. 4 dip: The last of the pillars are being taken out. Return airways in good order, having been recently cleaned up. (4/9/1902): No. 2 dip: The only men working here were drawing plant. No. 4 dip nearly finished, only two stumps of pillars left. Air fair. No. 2 dip: Bottom level cut off by rising water. Three pairs of men splitting pillars near the roadside. (2/10/1902): Air at intake, 20,250 cubic feet per minute. McDougall's heading section finished. Penman's heading section: Only two pairs of men working on pillars. Air warm, but no gas. North section: Pillars on roadside being brought rapidly back; all stop-

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pings well attended to. (18/11/1902): Stone-drive extension in 320 ft. to face. The drum-heading and north-side workings being rapidly exhausted. Brick wall cool, having recently been partly renewed with ash stopping. The main return airway to furnace in good order. The weight which had for some time been felt on stone drive and centre heading appears now to be settled. (19/11/1902): Air at intake, 21,060 cubic feet per minute. No. 7 dip, started off Duncan's level, is down 120 ft. to face in good hard coal. No. 2 dip: Pump drawn and water rising slowly. The three pillars being split are well in, and nearly up to the fault. (2/12/1902): A slight ignition of gas occurred on the 24th November at the top of No. 7 dip. Ralph Barclay, miner, was assisting his trucker, having naked light on head, when the ignition occurred. The ignition was very slight. Barclay was slightly burnt on the neck and arms; off work one week in consequence. On making inquiry into the matter, I learnt that John McCaughern, deputy, had passed Barclay into work without having previously examined the place with a safety lamp. The mine-manager subsequently took proceedings against McCaughern for breach of General Rule 40, section 33, "Coal-mines Act, 1891." Defendant pleaded guilty, and was fined in the sum of £1, with costs £2 2s. McCaughern held the reputation of being a careful and reliable man. Stone-drive extension at 380 ft. struck 6 ft. seam of coal, being upper part of Shore's or 18 ft. seam, which is here split by a band of clay 6 ft. in thickness. The seam is lying at an easier angle than usual, about 1 in 6. Coal good quality. (11/12/1902): The north side now cut off back to No. 1 heading, rails lifted, and stoppings in on level and at overcast. Stone-drive extension: The 12 ft. seam forming the under-part of the 18 ft. seam has been struck, and, lying at 1 in 8, is somewhat flatter than the upper portion of the seam lately cut, indicating a reversal of the general dip of the seams to the eastward of the crown of the seaward range of hills. At my suggestion the manager, Mr. Barclay, has served out copies of the pamphlets of general and special rules to all the officials at the mines, with a view to the men being examined as to their knowledge of the Act in regard to their several duties. Rules posted. Mine-manager's, underviewers', deputies', and enginewright's report-books invariably well kept. An adequate supply of lamp-station notices are kept on hand and posted as required. It is to be regretted that for a considerable period notices posted in certain districts in this mine had been mutilated by some evilly disposed person or persons, and every effort has been made to discover the offender, but without success.

Kaitangata Colliery, Old Mine.—(12/6/1902): After being closed down for some fifteen years on account of fire, and reopened several times unsuccessfully, the old gully mine has been again reopened and black-damp drained off. The fire, long dormant, broke out afresh and fanned up on fresh air getting to it. Water having been laid on under pressure, the fire is now under control, air coursing freely and circulation good all over those parts of the mine we explored. Roof generally standing remarkably well, most of it remaining just as it had been left years ago. There appears to be a fairly large quantity of head, bottom, and pillar coal available. Timber in dry places standing good and sound, probably having been preserved in the atmosphere of CO_2. I could find neither gas nor damp in the mine. (18/6/1902): Between forty and fifty men now working steadily on pillars and head-coal. Air good; no gas to be found. (6/8/1902): Inner section: Old upcast shaft has been opened and now being used, pillars being drawn and tops dropped. Outer section: Old dip being reopened, compressed air laid in, and winch being erected for haulage. (5/9/1902): Examined carefully, but found no trace of gas anywhere; extensive falls reaching to surface where pillars are taken out not only form vents for escaping gases, but gravel running into old bords helps to support roof and maintain roadways, and renders the work of drawing pillars more safe than would otherwise be the case. Air good. (3/10/1902): Robbing in the old dip now finished and rails lifted. Pillars being brought rapidly back in the old workings. Several places fallen high and roof ugly-looking, but kept closely watched, and at present hard sounding. (19/10/1902): Air dull in two of the inbye pillars, which are almost finished. Robbing has been successfully conducted, and nearly the whole of the pillars and roof-coal are being recovered.

Castle Hill Mine, Kaitangata (G. H. Broome, manager).—(12/2/1902): In Nos. 1 and 2 working-places the roof cuts up, and requires timbering to the face of every place. The main seam workings were in good order, as were the return airways to the furnace. I found no gas, although a little is occasionally reported as being found in No. 7 bord, No. 1 dip; it was all clear to-day. Report-books kept up to date. (11/4/1902): The gauge of all roadways had been recently altered from 2 ft. 2 in. to 2 ft., and endless-rope haulage extended to bottom of dip; tension-wheel now situated at the 2,900 ft. mark. The main stone cross-measures drive—or extension, as it is called from this point—is being driven horizontal, and pushed forward steadily by three shifts of men. Face now at 200 ft. past tension-wheel. Work in coal confined to Nos. 1 and 2 dips in 11 ft. seam. Mine in good order. Air good; no gas. (19/6/1902): Air at intake, 28,800 cubic feet per minute. No. 3 dip being opened in the 11 ft. seam, off north level. No gas at face, but a little in pot-holes along the roof of the level, coal from main seam now being lowered down jacky pit. The seam going south is pinching in and contracting between two faults, and, unfortunately, is not opening up the body of coal expected. The stone-drive extension at 5 chains is stopped on a blower giving off gas and water freely, and is being allowed to bleed off before work is resumed. (3/7/1902): Examined Nos. 1 and 2 dip workings. I found two miners named Barris and Mackie working with naked lights inbye a lamp-station notice in No. 2 dip. The face was clear of gas, but the notice had not been taken down. I drew the manager's attention to the men working inbye the notice, when they stated that the deputy had served out safety lamps in the morning and told them that they could use their naked lights after an hour's work. This statement was denied by the deputy, M. Greene, and the manager subsequently prosecuted the men for breach of Special Rule 74, when the Magistrate convicted and mulcted defendants in costs, 9s.

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each. I also drew the manager's attention to the necessity of having closer attention paid to the timbering of several bords in the dips. (7/8/1902): Air at intake, 30,480 cubic feet per minute. Traversed the main haulage roadways, working-places, dips, levels, and return airways to furnace, and found all in good order. Also examined the old workings so far as I could get into them, and found all clear. Coal proud in new seam (supposed to be Kaitangata main seam) and in the No. 2 dip. The men are wearing gauze shields for protection to their eyes. (20/11/1902): Air at intake, 31,890 cubic feet per minute. The main extension is standing in an 8 ft. seam of coal, and is being allowed to "bleed," as gas giving off freely. Gas is also making in the advancing places in No. 3 dip, north side. Air conducted to faces by brattice and stentons put up at regular intervals as rapidly as possible. Due precautions taken; only safety lamps used, and lamp-station notices posted. (10/12/1902): Work in Nos. 1 and 2 dips now discontinued. Coal-getting confined to No. 3 dip, north-level section, in the 11 ft. seam, and the shaft-workings main seam. Gas making, more or less, in all the advancing places in the solid. Lamp-station notices posted, and air conducted to faces by brattice. Roof cutting badly in north level and No. 3 dip bords, and timber kept close up to faces. A slight ignition of gas occurred in Geary's bord on the 5th December. The deputy, M. Greene, having discovered a trace of gas at the face in the morning, posted a notice outbye. About an hour later D. Wilson, roadman, passed the notice with a naked light on his cap, when a very slight ignition occurred. I saw the notice, which was dirty and discoloured. After due consideration the mine-manager instituted proceedings against the deputy, and also M. Carson, underviewer, for not having a proper caution-board posted, as required by Special Rule 14 in the appendix to the Act. Defendants pleaded "Not guilty," but the Bench inflicted a nominal penalty of 2s. 6d., with £1 12s. 6d. costs, against each. On the 9th December Robert Russell had been buried for a few minutes under a fallen set of timber and overlying crushed coal, which came away while he was setting a false prop to the set. Russell escaped with a few bruises. The manager reported that a safety lamp had been returned to the lamp-cabin having three holes deliberately driven through shield and gauzes, as though with a pick. The person having used the lamp during the shift had not been identified.

Longridge Mine, Kaitangata (Nesbit Mackie, permit).—(21/11/1902): A new mine opened in the bush on a ridge about two miles below Kaitangata Township. McAllister Bros. had formerly worked the seam on the opposite side of the ridge. Seam 4 ft. in thickness. Coal from the mine carried by tramway to main road.

Wangaroa Mine, Kaitangata (James Smith, owner).—(28/8/1902): No one about to-day, but from appearances the mine is being regularly worked, and is in good order. The toll-bar erected last year remains in position.

Mainholm Mine, Waipahi (Fred Lischner, owner).—(4/5/1902): This mine continues to be worked in a systematic and consequently remunerative manner. A splendid face of coal 22 ft. in depth is being worked. A considerable area is kept stripped in advance of the working-face.

Central Otago.

Coal Creek Collieries Company, Coal Creek, Roxburgh (R. Newell, permit).—(6/2/1902): The seam is strong and thick, and the places are driven high and wide, fair-sized pillars being left. Ventilation good. (11/3/1902): Mine in fair order. (31/5/1902): Mine in good order, but I found that the manager was overstepping the mark by employing more men than his permit allowed. (30/6/1902), (J. Barber, manager): Toward the opencast workings the faces meet the clay roll. Air good in all the faces. The freehold is being prospected slowly. (4/10/1902), (W. Barclay, manager): All the working-faces in the mine are driven to the floor of the seam and up to a "roll" towards the open face; several of the larger pillars are being split. Seam being some 80 ft. in thickness, there is a great quantity of coal overhead which is intended to be worked opencast eventually. (14/11/1902): The prospecting-drive on the company's freehold has reached the coal-seam. Mine-workings in good order.

McPherson's Pit, Coal Creek, Roxburgh (M. McPherson, lessee).—(6/2/1902): Opencast pit; in good order. (4/10/1902): 18 ft. of coal is being taken up in the bottoms in the second bench and 8 ft. to 10 ft. in the upper bench. The drainage-tunnel is acting satisfactorily, and keeps the lower workings dry. There is a considerable percentage of soft coal in the seam, which is carted out of the pit and burnt on the waste-heap.

Craig's Perseverance Mine, Coal Creek, Roxburgh (James Craig, permit).—(6/2/1902): Mine in good order, and ventilation good. (30/6/1902): Coal still being mined from the second level. The mine is kept free from dross, and is in good working-order. (4/10/1902), (A. Craig, permit): The places are driven 9 ft. wide, the pillars being left 7 yards square. The hydraulic hauling and pumping plant continues to give satisfaction.

Gully Pit, Roxburgh (Gourley and Rennie).—(4/10/1902): No one about; pit full of water.

Perseverance Colliery, Alexandra (R. Finlay, owner; Ed. Evans, permit).—(11/2/1902): Owing to illness the proprietor has not been able to devote his attention to this mine, which is consequently suffering from mismanagement; and, as the workings are becoming more extensive, the necessity for the services of a skilled man become more apparent every visit. Roof tender and hard to keep, and the bottom is also swelling somewhat. Timbering not being sufficiently attended to. (19/2/1902): As in the adjoining mine (Lett's), it is found that the dip is flattening and inclined to rise from the trough. The soft seam at 6 ft. from the bottom makes a bad roof, and, timber being costly, the alternative is to drive bords narrow, not more than 8 ft. to 9 ft. in width, when with care the roof arches naturally. I had to draw the manager's attention to dross being left too thick in places—a source of danger from spontaneous ignition in the event of falls from the roof occurring. (3/4/1902), (James Pollock, manager): Attention is being paid to the maintenance of the dip, which is being

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driven 7 ft. in width, and is now 16 chains to the face. Bords are now being broken away 6 ft. in width, and gradually widened out to not more than 9 ft., in the hope of maintaining the places without much timber. Ventilation good; air stoppings in good order. (2/7/1902), (J. Frame, manager): The mine is in fair order and ventilation good, but the water being allowed to rise in the dip must ultimately have a bad effect, as the bottom is naturally inclined to swell. (9/10/1902): There are indications of a weight coming on the pillars in the worked bords, and the poplar timber used makes very inferior mining timber. The return airway is in a bad state of repair, but the ventilation is fair at this date. A small duplex "Tangye" pump is being placed in the dip for unwatering the mine. (11/10/1902): The return airway is being put in a state of repair, and the renewal of timber where necessary in the working-places is receiving attention. (11/11/1902): Owing to smooth partings in the roof and a little weight on pillars the sides are difficult to maintain. An adequate supply of timber had not been procured in time, and the roof, where the bottom is soft, had fallen somewhat. The return airway, owing to falls, is not in a proper state for a travelling-way. Mr. Finlay unfortunately continues in a bad state of health, but I impressed upon his manager the necessity for immediate steps being taken to remedy the condition of the mine.

McQueenville Coal-mine, Alexandra (R. Lett, owner; J. Howie, manager).—(11/2/1902): Examined the working-places, also the old workings, and found the mine in a very satisfactory condition. (9/10/1902): Mine in good order generally, but ventilation rather dull. The manager is absent on leave, having met with an accident to his chest by falling forward on the corner of a box in the mine. Mr. Carson, of the Alexandra Coal Company's mine, is acting as supervisor during Mr. Howie's absence.

Drummey's Pit, Alexandra (J. Drummey).—(11/11/1902): No one about. The pit-bank looks as though no work had been done for some considerable time.

Alexandra Coal-mine, Alexandra (W. A. Thomson, owner; M. O'Connell, permit).—(11/2/1902): Horse haulage is proving inadequate, and the water is steadily gaining and rising up the dip. (19/2/1902): This mine has latterly not been conducted satisfactorily, water being allowed to rise, and is now three bords up in the dip. The owner announces his intention to put down a steam-pump and hauling-engine to replace horse haulage hitherto in vogue. Owing to the manner in which the frontage of this area has been worked entrance to the field behind is becoming restricted, and I have notified Mr. Thomson that improvement in his methods of working is urgently required. (4/7/1902): Mine standing full of water; nothing doing. (9/10/1902), (James Pollock, manager): A 16-horse-power "Marshall" boiler has been erected at the mine-mouth, and a pump and hauling plant are being procured. (11/11/1902): A duplex "Snow" pump, capacity 8,000 gallons per hour, had just been started. A 12-horse-power combined haulage-engine and drum, with reversible and clutch gear, is being procured.

Alexandra Coal Company, Alexandra (William Carson, manager).—(8/2/1902 and 10/2/1902): Boreholes regularly put up 7 ft. in the roof at intervals of 20 ft. Mundy's heading (where the dredge crossed) is now filled for a length of 32 ft. with bags of gravel, faced with a building of timber in the front. Air good; mine in good order. (30/4/1902): The seam is 28 ft. in thickness, of which about 8 ft. is being worked, ample pillars being left. The parting between the bottom coal and the brown coal is regular and well defined throughout the pit, and regulates the height to which bords are being driven. All places are being driven to lines, and, the sides and roof being strong, the workings look very well, a fall from roof or sides being unknown in the pit. The seam lies almost flat, but a trough running north-west and south-east traverses the workings, forming a convenient lodgment for water. (3/7/1902): Mine in good order; ventilation fair. (11/10/1902): A record of the quantity of water pumped having been kept, it is found that the average quantity continues—viz., about 50,000 gallons per diem, there being no perceptible increase. A new winding-rope has been put on, and a 20-horse-power "Marshall" boiler is being installed to replace the vertical boiler at present in use. Rules posted, but torn, and require to be renewed. (12/11/1902): Bore-holes in the roof are consistently attended to, one of the men being appointed for that purpose. After careful examination I could find no trace of water at any of the holes, and from all appearances the seam appears to be most regular in its deposition. The seam is lying practically horizontal, and is immediately overlaid by free gravel, which is undoubtedly waterlogged to the level of the Clutha River, which is cutting into the bank on this area as rapidly as dredging operations are being prosecuted. The Molyneux Hydraulic Gold-dredging Company holds the surface of this area as a special claim.

Undaunted Pit, Alexandra (D. H. Mathias, permit).—(11/2/1902): The dip is being extended and bords broken away. The dross is being allowed to accumulate. Ventilation fair. (9/7/1902): Workings in good order. (9/10/1902): The dross shows no sign of heating. As a precaution the heavier accumulations have been cut into and turned over. Dip 150 ft. to face. Bords broken away at 10 yards centres. Four men employed.

Rivers's Pit, Alexandra.—(11/11/1902): Mr. Rivers having applied for cancellation of his lease, acting under instructions I re-entered upon the area this date. The shaft is filled in to the surface. Mr. Rivers informed me that the only work done was a drive 2 chains east under the Manuherikia River, and a level driven 100 ft. south from the shaft. On the men going to work one morning the shaft was found full of water to river-level. Mr. Rivers spent a good deal of money trying to bale the water out, but, being unsuccessful, finally gave it up and abandoned the pit.

Cambrian's Coal-pit, Cambrian's (C. Dungey, lessee).—(9/1/1902): The man at work in the pit was undermining the face. Not much doing here. (9/12/1902): A new pit being opened on the face of the hill overlooking the township. I requested Mr. Dungey to remove gelignite and detonators from the abandoned pit.

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Welshman's Gully Pit, Cambrian's (J. McGuckin, lessee).—(9/1/1902): Water formerly used for stripping is diverted and now being used for alluvial-gold mining. Only bottom coal being lifted at present. (9/12/1902): An attempt had been made to win this coal by underground mining, but is now abandoned, and opencast working reverted to. Stripping overlying the coal (some 20 ft. in depth) is not being kept back from the working-face in a proper manner. I drew Mr. McGuckin's attention to this, and subsequently wrote him on the subject.

Blackstone Hill Pit, Blackstone Hill (Robert Thurlow).—(11/1/1902): Two men are engaged draining and reopening the pit. (10/12/1902): Face 5 ft. of stripping overlying 15 ft. of coal. Coal is being left underfoot, the small pump in use being unable to cope with the water under that level. Thurlow was slightly burnt in the pit on the 13th May. After lighting a fuse he threw the match away, and it fell on the bag containing the blasting-powder.

G. Price's Coal-pit, Blackstone Hill (G. Price, lessee).—(20/2/1902): Only coal for private use now being taken out.

Hawkdun Station (Private Pit), St. Bathan's.—(9/1/1902): No coal has been taken from this pit for several years.

St. Bathan's Pit, St. Bathan's (J. Enwright).—(11/1/1902): Stripping kept well back from the working-face. Pit in good order. (10/12/1902): The recent wet weather is blamed by the owner as being the cause of the pit not being in such good order as on the occasion of my previous visit.

Rough Ridge Coal-mine, Idaburn (M. Beck, manager).—(11/1/1902): Overburden not well stripped back, and coal-face being undermined. Mr. Beck promised to attend to the stripping at once. (20/2/1902): I found two men working under an overhanging face 35 ft. in depth. I warned the men of their danger, and advised them to remove to another part of the pit pending the face being made safe, and subsequently notified the owner of the dangerous method of working. (23/4/1902): Revisited the mine on this date, when I found that stripping had been taken well back, and the pit made safe and in very fair order. (10/12/1902): The mine is being worked on somewhat better lines than formerly. The stripping is now carried well ahead of the working-face. Three men employed.

McLean's Coal-pit, Idaburn (L. McLean, lessee).—(11/1/1902): Nothing doing. The pit has evidently not been worked for some time. (10/12/1902): This pit still idle.

Idaburn, Idaburn (J. White, lessee).—(11/1/1902): Overburden not being kept back from the coal-face, which was being undermined. The owner promised to attend to the stripping at once. (20/2/1902): White and another man were working under an overhanging face fully 20 ft., which was cracked and nearly down. I got the men to come up and take the loose down. (23/4/1902): Revisiting the pit on this date, I found some attempt had been made to strip in advance, but still insufficient attention paid to this important matter. The pulsometer pump in use is too small for the growth of water this wet season, and operations are considerably hampered thereby. A larger pump will be a necessity before dip coal may be won. (10/12/1902): Pit now in good working-order.

Border, Rough Ridge (G. Turnbull, lessee).—(11/1/1902): On this date the pit flooded. (23/4/1902): Work much hampered owing to wetness of season. Pit being in creek-bed, protective works have been carried away by successive freshes, and pit flooded. The two "Douglas" hand-pumps worked by water-wheel not being able to cope with the water, a certain thickness of coal is being left on the bottom. Stripping well attended to. (4/12/1902): Pit in good order.

Gimmerburn, Gimmerburn (C. Docherty).—(12/1/1902): Coal being worked to water-level only, the stripping being heavy. Coal now being taken out for private use only.

Reilly's Area, Kokonga.—(13/1/1902): Three prospecting-drives had been put into the terrace from the river-side, but are now abandoned, and nothing doing.

Commercial Coal-pit, Upper Kyeburn (C. Archer, permit).—(12/12/1902): Since last visit the dip has been extended to 110 ft. A low level is now being driven 9 ft. high by 12 ft. in width, with an average roof of 9 ft. of coal overhead. Following the usual custom, the overlying gravel is run into the level to enable the head-coal being won. Mine in good order. Ventilation fair.

Dairy Creek Coal-pit, Clyde (R. Robertson, permit).—(8/7/1902): Mine in very good order. Coal strong, and very little timber required. Ventilation good. (13/10/1902): A new hauling-rope has been put on. North-side workings stopped on a fault. Mine well conducted.

Clyde Collieries, Clyde (G. F. Turner, manager).—(8/7/1902): The mine is in good order. Ventilation good. Reports to date. (13/10/1902): The seam is intersected by small faults and clay bands, which give considerable trouble. A "break" struck in the seam gave off sand with water until checked. The dip-face is at 340 ft. from the mine-mouth. Workings in good order. Air good.

Gibbston Coal Company's Pit, Gibbston (J. Hodson, manager).—(26/5/1902): The mine is in very fair order. Air-courses clear; ventilation good. Quite 50 per cent. of the seam is soft and inferior, but appears to improve in quality to the dip. The tram-line, one mile and a half in length, from the engine-house to the depot, at the foot of the mountain, is working satisfactorily. Owing to the configuration of the surface and to avoid cuttings, which would become blocked with snow in winter, there are twenty-six separate grades and one curve on the line. A jig 350 yards in length connects the mine-mouth with the head of the tramway. (28/10/1902): The upper portion of the seam known as the "3 ft. band" is now being worked, the lower level is being reopened, and there is a large body of coal available to the rise.

Doolan's Creek Coal Company, Gibbston (M. Begg).—(28/10/1902): A new road some two miles in length has been constructed from the saddle to the mine. A level 6 ft. by 4 ft. has been driven some 60 ft. on the strike of the seam. The coal is of good quality, and it is unfortunate that the mine is situated in such an inaccessible place. The proprietors are hopeful that the quality of the coal will more than make up for the enhanced cost of placing it on the market under the circumstances.

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Cardrona Mine, Cardrona (R. McDougall, owner; D. Scurr, manager).—(21/10/1902): Stripping being sluiced away ahead of the working-face. It is intended to open out at a lower level at an early date.

Cromwell and Bannockburn Collieries Company, Bannockburn (Thomas Barclay, manager).—(2/5/1902): Kawarau Colliery, Bannockburn: The new dip mine driven from outcrop is 70 yards to face; coal faulted and inferior. From surface indications the ground is somewhat troubled on this part of the area. (5/11/1902), (A. S. Gillanders, manager): An old mine-entrance on Shepherd's Creek has been reopened, and a dip is being driven. At 20 yards a fault was struck carrying running sand. The dip is now being turned in the coal to avoid the fault. A steam boiler and hauling plant have been erected on the pit-bank, as, the coal being of good quality, development is being steadily pursued.

Excelsior Mine, Bannockburn (T. Barclay, manager), (3/5/1902): Pillars are drawn to the rise. The level and airway pillars are being saved to provide for air-return from new dip. The engine and boiler from Pryde's old mine have been brought down and re-erected here for haulage and pumping purposes. The duplex "Tangye" pump, 7 in. by 5 in. by 12 in. (5,000 gallons per hour), easily keeps water under. (5/11/1902), (A. Gillanders, manager): Four levels are broken away off the dip extension, 10-yard pillars being left. Roof good, except on the south side of the dip, where it is inclined to fret a little. Ventilation good; report-book to date.

Bannockburn Coal-mine (T. Barclay, manager), (3/5/1902): Upcast air-shaft unfenced and upper timbers require renewal. Coal good at face of low level, seam opening up well. Air good. (5/11/1902), (A. S. Gillanders, manager): A new drive has been put in to win the rise pillars and save length of haulage. Air somewhat warm, but work being carried on safely. No work had been done in the lower workings for some months past. (5/12/1902): Hugh Donnelly and Frederick Jones, miners, were lighting the smithy fires to sharpen picks when an explosion of dynamite-caps occurred, inflicting wounds on chest and abdomen. Mr. Gillanders, mine-manager, being of the opinion that the caps were wilfully, if not maliciously, placed in the fire, brought the matter under the notice of the police. Inquiries were made, but without succeeding in obtaining sufficient proof to suspect any one of the deed.

George Jeffrey's Area, Bannockburn.—(2/5/1902): Four trial shafts have been sunk without result. The outcrop of the seam does not extend eastward so far as was anticipated. (5/11/1902): Nothing doing at present. The prospecting-shafts have been filled in.

Cairnmuir Pit, Bannockburn (Crow and Anderson).—(5/11/1902): I have been unable to see any work that may have been done at this pit during the year.

Charles Angel, Bannockburn.—(5/11/1902): Opencast. Coal for private use only being taken out.

Nevis Coal-pit, Nevis (C. Scott).—(31/10/1902): An effort is now being made to win the coal left on the bottom. A water-supply available for stripping is used as required.

Ryder's Pit, Nevis (C. Scott).—(4/11/1902): Seam now being worked opencast, owners having purchased an acre from Mrs. Holmes, the adjoining tenant.

Clough and Allen's, Nevis (Mrs. A. Holmes).—(4/11/1902): No work has been done in this pit during the year.

Gunion's, Nevis (R. Gunion).—(31/10/1902): No work has been done on this area so far by Mr. Gunion.

Ritchie's, Nevis (J. Ritchie).—(4/11/1902): Only a small quantity of coal has been taken out for private use. The pit will probably be opened next season for the supply of coal to a dredge at the Nevis Crossing.

SOUTHLAND.

Pukerau Coal-mine, Pukerau (C. O'Hagan, permit).—(3/5/1902): Mine in very fair order. Ventilation good. A windmill pump for unwatering the mine is working satisfactorily.

Nelson's Pit, Pukerau (J. H. Nelson).—(3/5/1902): A heading has been driven from the opencast face; being in a gully, a considerable amount of dead-work has been undertaken in clearing away slips and reopening the drainage-tunnel.

Mason's, Pukerau (A. Mason).—(3/5/1902): Coal taken out for private use only; 7 ft. coal, 5 ft. stripping.

Milne's Pit, Pukerau (A. Milne).—(3/5/1902): Coal taken out for private use only; 7 ft. coal, 6 ft. stripping.

Whiterigg Mine, East Gore (J. Hope, permit).—(1/5/1902): Mine in good working-order, but the mine-entrance requires to be trimmed and retimbered. (13/8/1902), (William Patterson, owner): The mine-mouth had been retimbered and made secure. I found more blasting-powder in the mine than was required for the day's supply, and advised the manager to reduce the quantity. A 6-horse-power oil-engine has been placed in the mine to provide motive power for the pump, but the owner's intention is to put in a steam pumping plant, when the coal will be mined to the dip.

Heffernan's Pit, East Gore (J. Boyd).—(1/5/1902): The main drive has been taken in 90 ft. at water-level. The mine-entrance is in an unsafe condition. I advised the manager to exercise more care in the handling of powder, which was being kept in an open cask at the mine-mouth. (30/8/1902): The mine-entrance has been made safe, and the mine is in fair working-order. Air good.

P. Healy (Private Pit), East Gore.—(1/5/1902): Only a few tons per annum are taken out for own use.

H. Smith's Pit, East Gore.—(3/5/1902): Coal taken out for private use only; 7 ft. coal, 8 ft. stripping.

A. McDonald's Pit, East Gore.—(1/5/1902): Coal taken out for private use only; 7 ft. coal, 4 ft. stripping.

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Robert Smith's Pit, East Gore.—(3/5/1902): Coal taken out for private use only; 14 ft. of coal, 3 ft. stripping.

Sarginson's, Gore (A. Reinke).—(1/5/1902): Coal now being supplied to dredges. Coal 7 ft.; stripping 2 ft. in depth.

Green's Pit, Gore (J. J. Smyth).—(1/5/1902): Ventilation good, and mine in fair order. Preparations are being made to obtain coal from the dip.

Knapdale Mine, Knapdale (R. Irvine).—(29/8/1902): Only coal for private use now being produced.

Harvey's Pit, Chatton.—(29/8/1902): Pit still idle.

Perkins's, Chatton (A. Perkins).—(2/5/1902): Face 12 ft. of coal, with 8 ft. of stripping, which is kept well ahead.

Pacey's, Chatton (R. Pacey).—(2/5/1902): A bench of 12 ft. of coal is being taken along with the stripping, which is here 8 ft. of clay, bottom coal being left for future requirements.

Otama Pit, Otama (Private Pit), (T. Graham).—(30/8/1902): Coal for own use only.

Cross's, Otama (Private Pit).—(30/8/1902): Coal for private consumption only being taken out.

Hunter's, Otama.—(30/8/1902): Pit smothered by slip; no one about.

Thorndale Mine, Waikaka Valley (E. C. Orchard and Sons).—(1/5/1902): Pit in good order. 10 ft. of coal overlaid by 6 ft. of stripping.

Johnston's Pit, Waikaka Valley (W. Johnston).—(1/5/1902 and 28/8/1902): Pit in good order, and stripping kept well in advance of the working-face.

Ritchie's Pit, Waikaka Valley (T. Ritchie).—(28/8/1902): A new pit on Johnston's farm, which has been opened to supply a dredge in the vicinity.

Reed's Pit, Waikaka Valley (R. Reed).—(1/5/1902): Having worked the pit out to the boundary, Reed is now prospecting for coal on the opposite side of the main road. (28/8/1902): The new pit is in good working-order. Face 10 ft. of coal, with 8 ft. stripping, which is kept well back from the face.

McGill'sPit, Wendon Valley (J. McGill).—(30/4/1902): Stripping attended to, and pit in good order. J. McGill, jun., sustained burns to arms and face on the 16th July by an explosion of blasting-powder, caused by accidentally dropping a lighted match into a quantity of loose powder in the pit.

McDonald's, Wendon Valley (J. Dwyer).—(30/4/1902): Mine in fair order, and ventilation good. (25/10/1902): Coal continues hard, and roof strong. All coal is got by shooting, loose blasting-powder being the explosive used. An accident occurred in the mine this morning, whereby Alexander Graydon sustained fracture of left leg, and Joseph Tikey face and arms grazed and body bruised, by flying coal from an unexpected third explosion in the face. Two shots had been fired, and two explosions occurred. The men had returned to work, when a third explosion took place. Presumably some of the grains of powder had dropped into an open moist back crossed in the hole, and smouldering embers had ignited it. I recommended the proprietor to adopt the use of compressed powder, by use of which such accidents would be prevented in future.

Edge's No. 14, Waikaka.—(30/4/1902): The pit has been closed down owing to the coal becoming soft and inferior in quality. A new mine is now being opened adjacent to McDonald's pit. I drew the miners' attention to the careless handling of blasting-powder at the pit.

Busbridge's, Wendon Valley (J. Busbridge).—(29/4/1902): The coal-face is opened out at the foot of a steep hillside, and the pit is smothered by slips. Pit almost inaccessible, being three miles from the formed road. A small trade done during harvest season, and winter stocks laid in by the neighbourhood.

Stevenson's, Wendon (J. Stevenson).—(30/8/1902): A new pit opened recently. A 7 in. centrifugal pump driven by traction-engine is used for unwatering the pit. Stripping 5 ft. in depth, and seam (unbottomed) 10 ft. in the face.

Radford's Pit (Carmichael's), Wendon (E. and P. Radford).—(30/8/1902): The water-supply for stripping being inadequate, the undertaking has not proved remunerative, and the pit is not now being worked.

Waikaia Collieries Company (late Monaghan's Pit).—(12/5/1902): Opencast on the hillside. Very little coal had been taken out to date.

McIvor's (late Goldie's), Waikaia (R. McIvor).—(12/5/1902): Sluicing off overburden, and recovering blocks of coal left when the seam was driven out.

McIvor's, Landslip, Waikaia (W. McIvor).—(12/5/1902): Stripping removed by sluicing.

Muddy Terrace (Shale-pit), Waikaia (T. F. Goldie).—(12/5/1902): The shale is being worked and used as fuel. Pit in good order.

No. 1 Pit, Landslip, Waikaia (A. McKinnon).—(10/5/1902): Seam 7 ft. in thickness, with a strong stone roof above. In the old workings the roof and pillars are still standing.

Argyle Pit, Waikaia (J. and T. Baxter).—(12/5/1902): An effort had been made to win the coal by driving, but the drive had collapsed, and stripping has been again resorted to. The water-supply is too light for the purpose of stripping adequately, and the pit is consequently in a dirty state.

Waimea Pit, Longridge Village (G. Larsen).—(30/8/1902): The pit formerly worked by A. Smith is worked out, and Larsen is prospecting on the site of an old pit higher up the valley.

Pyramids Pit, Mandeville (E. MacAllister).—(30/8/1902): Coal for home consumption only now taken from the mine. Roof strong, and workings standing well.

Waimumu Coal-pit, Mataura (C. P. Sleeman).—(21/1/1902): The manner in which this pit is worked affords an object-lesson in opencast working. Stripping well ahead of the working-face. (25/8/1902): The working-face is fully 80 yards in length. Stripping, 12 ft. of gravel. Average

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depth of seam, 15 ft. The drainage-tunnel is 1,100 ft. in length, having 8 ft. of fall, and continues to keep the pit water-free. A trial drive, 10 ft. high by 10 ft. wide, had been driven some 40 ft., and proved the seam to maintain its thickness and quality. The owner has, however, decided to continue working opencast in preference to driving. The output of coal from this mine for the year 1902 amounted to 9,452 tons 10 cwt. Average number of men employed, nine.

Bogside Coal-pit, Mataura (H. Brown).—(21/1/1902): Pit being well worked, and stripping kept back from the face. The drainage of the pit is rather heavy for the small steam pumping plant in use. (25/8/1902), (Mutch and Hurst): Pit now standing full of water, but the owners intend reopening at an early date.

Beattie and Coster's Pit, Mataura (W. Coster).—(21/1/1902): Stripping kept well back from the face, and pit in good order. (25/8/1902): Seam maintains its thickness of 16 ft., with 10 ft. of stripping. The face is fully 50 yards in length, and the stripping is kept well in advance of face.

Mutch's, Mataura (J. McGilvray).—(27/8/1902): Mr. McGilvray has bought Mutch's property. Some 80 tons of hæmatite per annum is supplied to Mataura paper-mills. The coal-pit is shallow, and is now full of water.

Duthie's Pit, Waimumu (J. Duthie).—(22/1/1902): Negotiations are pending with a syndicate to purchase the pit and furnish coal-supplies to dredges in the Waimumu Valley. Working-face, 150 ft. in length; seam, 10 ft. 6 in.; stripping, 12 ft. A clay band 3 ft. in thickness underlying the seam is resting on a lower seam of coal, which is not being worked. Pit in good working-order. (26/8/1902), (W. J. Williams and Son): A tramway three miles in length has been constructed to the Waimumu Valley, and the requirements of the district are amply provided for.

Lambert's, Edendale (R. H. Lambert).—(22/4/1902): Three men at work getting coal for the Two Creeks dredge. Stripping about 6 ft.

Nightcaps Colliery, Nightcaps (J. Lloyd, manager).—(28/2/1902): Development-work extending on the north-east boundary underground, and the opencast working on the outcrop. Air a little dull in the new dip and the new rise heading, elsewhere good. New fan-ventilating shaft just completed; depth, 65 ft. by 6 ft. diameter, brick-lined; foundations for fan being laid. Mine throughout in good order; requirements of the Act well observed. Plan and report-books well kept. (25/4/1902): Mine in good order throughout, roadways and air-courses clear, and an adequate supply of timber kept on hand. Air rather dull, but a subsequent visit to the ventilating-furnace disclosed the fact that the furnace-man had been neglecting his duties. No. 2 mine in good order, and timber-supply unstinted. (30/10/1902): The new low-level drain, to dispense with pumping in the mine, is 16½ chains to the face; total length of drain when finished, 28 chains. The drain is timbered throughout, and is ventilated by a 2 ft. diameter fan driven by an overshot water-wheel 6 ft. 6 in. diameter; air-pipes 7 in. diameter, laid to the face. The mine throughout is in excellent order, and plant well above present requirements. Stripping kept well back on opencast workings. All underground working-places well provided with timber, and air conducted to the faces. A 9 ft. diameter "Hayes" fan, recently erected, is belt-driven by a 9-horse-power horizontal engine; boiler, tubular, 12-horse power. The fan is designed to run up to 200 revolutions per minute, and when put to work was found to circulate 51,030 cubic feet at 152 revolutions. This being in excess of requirements, the working-speed has been reduced to 100 revolutions per minute, at which speed a most ample ventilation is maintained. Air conducted direct to faces; air stoppings and doors being in an efficient state, little or no loss from leakage occurring.

H.B. Coal-mine, Nightcaps (T. Kelly and W. Reid).—(28/2/1902): The new lessees, having renewed timber where required, have put in a number of extra props on the level. Air conducted to the faces, but the upcast shaft should be enlarged at the bottom. (26/4/1902): The seam is not thick enough to allow of much coal being left overhead, and consequently some difficulty is experienced in maintaining the roof. Ventilation fair, and airways clear. The upcast shaft is provided with a chain ladder. (29/10/1902): Attention paid to safety of working, and timber kept close up to the faces. Air well conducted.

Hit or Miss Mine, Nightcaps (Alley and Tinker; W. Tinker, permit).—(26/4/1902): Mine in good order; timber plentifully used, and ventilation good. The mine is being opened in a regular manner, 6-yard pillars being left. (21/10/1902): Mine in good order, and carefully worked. The level is advancing in good hard coal.

Blythe Pit, Nightcaps (Grier and Spence, lessees).—(27/4/1902): The coal is dipping below water-level, and the stripping is also becoming too heavy. Pit standing full of water. (30/10/1902), (J. Ritchie, owner): Nothing doing here now, the pit having been abandoned by the lessees.

Wairio Mine, Nightcaps (A. McBride).—(26/14/1902): The mine had been sublet to Mr. J. W. Kelly, who had driven on the 11 ft. seam for about 90 ft. At this date the rails had been lifted, and the mine was standing full of water. Only a small quantity of coal now being taken out for private use.

Quested's Pit, Nightcaps (J. Quested).—(26/4/1902): Present face 4 ft. of coal, with 2 ft. of light stripping. A new pit is being opened in the neighbourhood.

Brighton's, Nightcaps (J. Clarke).—(26/4/1902): The seam is worked opencast; 6 ft. of stripping overlying 14 ft. of very good coal. Mr. John Clarke is working the pit during summer months under an arrangement with Mr. Brighton. Stripping kept well ahead of the working-face.

Mount Linton Station Pit, Nightcaps (Colonel Chalmers, owner).—About 60 tons of coal per annum is taken out for own consumption. A water-wheel is being erected for pumping purposes.

Orepuki Shale-mine, Orepuki (New Zealand Coal and Oil Company; M. Straw, manager).—(26/2/1902): Only Nos. 1 and 2 headings now working, it having been found necessary to concentrate the men and work out sections as rapidly as possible, owing to the "waste" heating and the

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difficulty of getting in tight stoppings in the broken ground. Timber plentifully used, and roadways and working-places in good order. The "Hayes" fan recently erected, running at 180 revolutions, produced 33,120 cubic feet of air per minute. Water-gauge, $1\frac{1}{10}$ in. (23/4/1902), (A. Love, manager): Return airway in good order. Fire stoppings have been placed at the heads of all the jigs to the south level, and are well attended to. The pillars are somewhat crushed, and a little leakage of damp prevails. Only seven men on the average are now employed in repairing and getting coal for surface requirements. (31/7/1902): Connection has been made between the iron main jig and the coal-faces. One holing-machine is at work in the upper level. A good deal of timbering has been done in the main roadways and air-courses, and the back airway is now a good travelling-road. Ventilation good. Report-book to date. (28/10/1902): Work underground limited to four men producing coal for surface-boiler consumption. The whole of the old district now closed off; fire stoppings in, and well looked after. Air excellent. Roadways and working-places well timbered and safe.

REMARKS.

The output of coal and lignite (Southern District) during the year 1902 amounted to 419,179 tons, a total increase of 24,112 tons over the previous year. Returns of output from the several portions of the district are as follows:—

	Tons.
Canterbury	19,445
Otago	308,310
Southland	91,424
	419,179
Output for previous year	395,067
Increase	24,112

The contributions to the Coal-miners' Relief Fund amounted to £409 19s. 9d., while payments from the fund had been recommended amounting to £338 2s. 3d.

ACCIDENTS.

There have not been any fatal accidents in coal-mines in this district during the year. A total of seventy-nine accidents have been reported to me, only a few of which might be termed serious, a large proportion being of a trivial nature, and resulted in the men being only a few days off work. Of the above total, fifteen were accidents to eyes, two of which were aggravated and rendered serious by the patients' delay in visiting medical men. The rules issued by the Department for treatment of eye accidents have been extensively circulated, and the number of such cases has perceptibly decreased.

17th February, 1902.—Archibald Dobbie, trucker, Orepuki Shale-mine: Finger jammed between box and rail; subsequently amputated at the first joint.

26th July, 1902.—E. Middlemas, youth, rope-attendant at Castle Hill pit-bank: Bruised thigh; tripped and fell over a low embankment at the mine-mouth.

8th September, 1902.—Thomas Gray, banksman, Fernhill Colliery: Fracture of forearm while attempting to prevent a loaded box of coal from tipping up.

30th September, 1902.—James Marsh, miner, Homebush Colliery: Bruised shoulder; while wedging a fall of coal off the pillar side a flake came away unexpectedly.

25th October, 1902.—Alexander Graydon, miner, McDonald's Pit, Wendon: Fracture of leg by flying coal from a shot in the face.

I have, &c.,

E. R. GREEN,

The Under-Secretary, Mines Department, Wellington. Inspector of Mines.

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3. The temperature of the air in the downcast and upcast shafts of a colliery is 50° and 80° Fahr. respectively: what volume of air in the upcast amounts to the same weight as 1 cubic foot in the downcast at same depth?

4. Show how you would ventilate the workings on annexed plan, having due regard to the requirements for haulage.

5. If a drift 30 yards long, 6 ft. wide, and 4 ft. high is filled with a mixture of firedamp and air at the most explosive point, what quantity of air would be required to dilute it so as to be non-explosive?

SUBJECT No. 6.—*On the Nature and Composition of Explosives and Dangerous Gases met with in Coal-mines, and on Spontaneous Combustion.*

1. Give the chemical composition of any of the high-explosive compounds of which you have a knowledge.

2. What gases are most common in coal-mines? State composition, under what conditions and where most frequently found.

3. Which is the most likely part of a working-place to find firedamp accumulating in? What is the most explosive mixture of firedamp and air? What effect has firedamp unmixed with air upon the flame in a lamp?

4. What in your opinion is the best means of avoiding dust-explosions in underground workings?

5. Explain what you understand by the term "spontaneous combustion," and what steps should be taken to prevent same in coal-mining.

SUBJECT No. 7.—*On the Drainage of Mines, and Pumping-appliances.*

1. What is the principle which governs the working of pumps generally?

2. What diameter of pump would be required to replace two pumps of 8 in. and 12 in. diameter respectively, assuming stroke same in each pump?

3. Give sketches of working-parts of—

(*a.*) Bucket lift,

(*b.*) Ram pump,

and show how placed in shaft.

4. Assuming feeder of water, 500 gallons per minute, to be pumped from a depth of 1,000 ft., what pumps would you apply, and what horse-power will be required to do the work?

5. State principle controlling the working of a siphon, and how same can be applied to drainage of mines.

SUBJECT No. 8.—*The Haulage of Coal on Underground Planes and Shafts, also Different Systems of such.*

1. What is meant by "self-acting inclines," and what is the least grade at which such inclines will act?

2. Describe with sketches any systems of haulage with which you are conversant, and state system you prefer, and why.

3. Describe with sketches how you would fit a shaft with necessary guides for cages to work in a shaft 1,000 ft. deep, and state kind of guide you prefer. Give reasons.

4. Assume shaft 800 ft. deep, quantity of coal to be raised 600 tons per day of eight hours, and show how you would arrive at size of engines, diameter of drum, and rope required.

5. State requirements of the Act as to inspection of machinery.

SUBJECT No. 9.—*The Theoretical and Effective Power of Steam-engines and Boilers, also Strength of Hauling Rope, Chains, &c.*

1. Find the horse-power of an engine whose mean steam-pressure is 75 lb., diameter of cylinder 18 in., length of stroke 36 in., and steam cut off at two-thirds of the stroke, number of revolutions being 50 per minute.

2. Sketch a Lancashire boiler, showing the position of fittings required, with name of each.

3. A loaded tub weighing 10 cwt. standing on a level takes a pull of 25 lb. to start it: what pull will be required to move it on an incline of 1 in 20?

4. Show by calculations how you would ascertain breaking-strain and safe working-loads of chains and ropes.

5. What size hauling-engine would be required to raise 100 tons per hour up an incline 1,000 yards long, grade 1 in 10, and assuming speed of five miles an hour?

SUBJECT No. 10.—*The Incrustation of Steam-boilers, Causes of same, and Remedies.*

1. Under what conditions does the formation of scale occur in steam-boilers, and what are the dangers likely to arise from such forming?

2. Describe any system with which you are acquainted for the prevention of incrustation in boilers.

3. What system for the heating of feed-water do you consider the best, and what are the advantages of using hot feed?

4. Under what conditions would it, in your opinion, be dangerous to put the feed on to a boiler; and under such conditions, what would you do?

SUBJECT No. 11.—*Tapping Water in Mines, and Mode of constructing Dams underground.*

1. What circumstances would guide you in selecting the position for an underground dam to resist heavy pressure? How would you construct such a dam, and what special precautions would you take during progress of work? Give sketches and dimensions, and state material to be used, and generally what would be required to make secure.

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2. Describe necessary precautions to be observed in approaching old workings known to contain dangerous accumulations of water. Give sketches showing how work carried on.

3. Assume dam 10 ft. by 7 ft., head of water 600 ft.: what would the pressure be per square inch, and what would the total load on the dam be?

SUBJECT No. 12.—*Blasting, and the Use of Explosives.*

1. Briefly describe what you consider the safest explosive for use in coal-mines.

2. State your reasons and explain what precautions you would take to prevent shots blowing out.

3. Describe duty of shot-firer and generally the precautions to be adopted regarding the firing of shots, more especially in mines known to give off firedamp and which are dry and dusty.

SUBJECT No. 13.—*The Effect of Faults on Coal-seam. How to ascertain Direction of a Seam of Coal when dislocated by Fault.*

1. Show by sketches the effect produced by faults—
   (*a*.) Downthrow;
   (*b*.) Upthrow;
   (*c*.) Overlap or reverse fault.

2. Describe a typical case, and what steps you would adopt to recover the seam.

3. What is the meaning of the term "intrusive rock," and what effect has such on coal-seams?

4. A seam of coal dips at the rate of 6 in. per yard when a downthrow fault of 50 ft. is met: how far would it be necessary to drive at 9 in. per yard dip before cutting coal-seam again?

SUBJECT No. 14.—*A Knowledge of the Different Classes of Coal, and of the Character of the Rocks and of the Formation of Country where Coal likely to be proved.*

1. State in which formation coal is generally found, and describe character of same.

2. What is anhydrous coal? Is there true coal found in New Zealand? If so, where?

3. Describe the rocks you consider to be indicative of the existence of coal in your district, giving a section.

4. Enumerate the several kinds of coal, and state the elements chiefly objectionable in coal, and why so.

SUBJECT No. 15.—*A Knowledge of Underground Surveying and Making of Plans showing System of Working, Inclination of Seams, Faults, and Course of Ventilation.*

1. Candidate must produce plan showing the system of working in a colliery, with the surface for at least 20 acres in the vicinity of the shaft and the underground workings in different-coloured ink. The connection between the surface and underground must be described in the event of there being only one shaft. The levels and main headings must have assumed traverse calculated in detail, and showing latitude and departure of each bearing.

2. In using the magnetic needle what precautions have you to observe in surveying and plotting?

3. Sketch as accurately as possible the following bearings, and calculate the latitude and departure, and give the course and length of the seventh set to tie with the start of the first set:—
   No. 1—S. 47·00° E., 340 links.
   No. 2—S. 79·30° W., 160 links.
   No. 3—S. 30·45° E., 420 links.
   No. 4—N. 62·30° W., 710 links.
   No. 5—N. 41·00° E., 230 links.
   No. 6—N. 62·30° W., 340 links.

4. Describe system of levelling you are acquainted with, and show how to keep a level-book and reduce levels.

SUBJECT No. 16.—*Knowledge of Arithmetic and of keeping Accounts.*

1. What will be the cost of laying a single tram-line 500 yards, with rails 20 lb. per yard, cost £9 5s. per ton; sleepers 3d. each, laid every yard; fasteners, 5 cwt., at 16s. per hundredweight; and men are paid 4½d. per yard for laying?

2. A colliery produces per week 6,500 tons of screened coal and 1,250 tons of small; the wages-cost on total output is 5s. 6½d.: what is the cost per ton of large coal when it is debited with the entire wages expended and credited with the value of the small at 3s. 10½d. per ton?

3. Contractors deliver coal at the pit-bank at the rate of 4s. 3·85d. per ton: what rates should be paid (*a*) at an advance of 13¼ per cent., (*b*) at a reduction of 5¾ per cent.?

SUBJECT No. 17.—*A Knowledge of the Coal-mines Act.*

1. Describe provisions of the Coal-mines Act—
   (1.) With regard to ventilation;
   (2.) Regarding reports of accidents;
   (3.) Signals in shafts;
   (4.) The inspection of shafts and machinery.

2. What are the requirements of the Act as to fixing stations, duties of fireman, and use of explosives?

3. What are the duties of the manager in terms of the Act?

4. What are the provisions of the Act regarding the fencing of abandoned workings, providing refuge-holes, second outlet from mine, timbering and setting of sprags when holing, and approach to old workings?

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QUESTIONS USED IN EXAMINATION OF MINING MANAGERS FOR SECOND-CLASS CERTIFICATES.

SUBJECT No. 1.—*On the Sinking of Shafts and Construction of Main Roadways in opening out a Mine.*

1. Describe briefly what preparations you would make before proceeding to sink a shaft, stating—
   (1.) The system of timbering you would adopt, showing how secured;
   (2.) What precautions you would adopt to protect men from falling *débris;*
   (3.) Precautions to be observed in firing shots in a sinking pit.
2. In starting opening out a mine with shaft, say, 500ft. deep and seam 10 ft. thick, dip 1 in 6, what size shaft-pillars would you deem requisite—roof good, floor soft?
3. State your experience in working in—
   (1.) Longwall;
   (2.) Bord-and-pillar.

SUBJECT No. 2.—*Methods adopted in securing Shafts and the Workings in a Mine.*

1. How would you prepare a bed for wedging curb for carrying cast-iron tubbing, and what condition of strata is essential?
2. Show by sketches how you would set timber in inclined seams so as to resist pressure of roof and sides.
3. When and where do you consider the use of timber chocks as packs advisable in a mine worked under the longwall system? Describe how you would set them, and the method you would adopt to withdraw them.

SUBJECT No. 3.—*The Various Methods of hewing and cutting Coal and securing Ground.*

1. Describe the process of getting coal by—
   (*a.*) Bord-and-pillar; and
   (*b.*) Longwall.
2. In clearing a heavy fall where roof bad, describe by sketches how you would proceed.
3. Under what circumstances are chocks useful in coal-workings?
4. What is meant by the term "gob-fire," and how would you proceed to seal up such a fire?

SUBJECT No. 4.—*Various Methods of Ventilating and Construction of Air-ways.*

1. What are the most dangerous gases met with in coal-mines? Why are they dangerous? Which of the gases have you had most experience with?
2. What size would you drive an airway to pass 10,000 cubic feet per minute?
3. What means of ventilating do you prefer? State reasons.
4. Explain your views as to what effect a heavy fall of the barometer has upon the condition of a mine.

SUBJECT No. 5.—*On Air-ways and Ventilation generally.*

1. What are the advantages of splitting air in mines? State where and when and how you would do it, and how you would provide for the proper quantity going in each direction.
2. Give sketch of an overcast air-crossing with sizes that you consider suitable to put over the main road in an extensive mine.
3. If you suddenly found you had a high-side goaf filled with firedamp, the goaf being 50 yards up and 100 yards wide, with a drawing-road on each side, describe step by step the course you would take to remove the gas, assuming you had sufficient air.

SUBJECT No. 6.—*On the Nature and Composition of Explosives and Dangerous Gases, and on Spontaneous Combustion.*

1. What kind of explosive do you prefer in a fiery mine, and how would you use it?
2. Give the composition of any of the flameless explosives of which you have had experience.
3. What does the Act stipulate in order to secure safety whilst charging shot-holes? and what precautions are to be taken in preparing coal for blasting?
4. What in your opinion is the best way of avoiding a dust-explosion?

SUBJECT No. 7.—*On the Drainage of Mines, and Pumping-appliances.*

1. Describe the kind of pumps of which you have experience.
2. In opening out dip workings with only moderate feeders of water, how would you carry them on? Give reasons.
3. A pumping-engine goes seven strokes a minute; length of stroke 8 ft., diameter of pump 15 in.: what is the quantity pumped per minute, in gallons?

SUBJECT No. 8.—*Haulage of Coal, and Different Systems in Use for Inclines and Shafts.*

1. How would you fit up an inclined plane to run 100 tons an hour? Describe appliances, and give reasons for adopting them.
2. Assume shaft 500 ft. deep, from which it is required to raise 50 tons an hour, what size engine would you put down?
3. Give brief description of any system of haulage with which you are acquainted, and state which system you prefer, giving reasons.

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SUBJECT No. 9.—*Tapping Water in Mines, and Mode of constructing Dams.*

1. What precautions are necessary in approaching old workings known to contain dangerous accumulations of water? Describe fully, giving sketches.

2. Sketch and describe a dam capable of withstanding heavy pressure, and give considerations guiding you in selecting site of same.

SUBJECT No. 10.—*Blasting, and the Use of Explosives.*

1. Under what conditions would you adopt blasting in a coal-seam? What explosives would you use in fiery and non-fiery mines, and what precautions would you adopt to insure safety generally?

2. In driving a tunnel from existing workings to a seam of coal expected to give off a large body of explosive gas,—(*a*) what measures would you take to insure safety, (*b*) what explosives would you use, (*c*) how would you fire the shots, and (*d*) assuming a blower of gas becomes ignited to an extent beyond what can be extinguished with wet bags, how would you extinguish the flame?

3. Is coal-dust an element of danger in a mine? If so, state under what conditions it is dangerous, and the various methods adopted for reducing the danger as far as practicable. Give advantages and disadvantages of same.

SUBJECT No. 11.—*Effect of Faults on Coal-seams.*

1. What is meant by the following:—

(*a.*) Downthrow fault;
(*b.*) Upthrow fault;
(*c.*) Overlap fault.

Show effect by sketches.

2. What is meant by the term "dyke" in coal-mining, and what is the effect of such on coal-seams?

3. Having driven against a downthrow fault, what steps would you take to ascertain amount of displacement, and how would you proceed to recover the seam and open out again?

SUBJECT No. 12.—*Knowledge of Arithmetic.*

1. How much money is required to pay the following day-work wages to five men, and what is each man's share?—

First man, 4 days at 4s. 6d. a day;
Second man, 5¾ days at 5s. a day;
Third man, 6 days at 4s. 3d. a day;
Fourth man, 2½ days at 4s. 2d. a day;
Fifth man, 3⅓ days at 3s. 11d. a day.

2. A collier receives £2 4s. for getting and filling 24 tons of coal, and he pays 5d. a ton for filling: how much does he receive for getting?

3. The wages of a company of miners at standard rate amounts to £15 10s.: what will the amount be if an advance of 27 per cent. on standard is made?

SUBJECT No. 13.—*A Knowledge of the Provisions of "The Coal-mines Act, 1891."*

1. Describe the provisions of the Act with regard to—

(1.) Ventilation;
(2.) Reporting accidents;
(3.) Shaft signals;
(4.) Explosives;
(5.) Duties of firemen and underground manager.

2. What are the principal points to be observed in managing a fiery mine in order to comply with the provisions of the Act?

3. Give provisions of the Act regarding fencing of abandoned places, providing second outlet and refuge-holes.

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APPENDIX II.

LIST of PERSONS who have obtained CERTIFICATES as MINE-MANAGERS under the Coal-mines Acts of 1886 and 1891.

THE COAL-MINES ACT.

FIRST-CLASS MINE-MANAGERS' CERTIFICATES.

Issued under the Coal-mines Acts, 1886 and 1891.

Aitken, T., Wendon.
Alexander, T., Brunnerton.
Austin, J., Sheffield.
Binns, G. J., Dunedin.
Bishop, J., Brunnerton.
Brown, T., Westport.
Brown, T., Glentunnel.
Cameron, J., Denniston.
Campbell, J. C., Fairfield.
Cochrane, N. D., Dunedin.
Collins, W., Taupiri.
Dando, M., Brunnerton.
Elliott, R., Wallsend.
Ferguson, A., White Cliffs.
Freeman, J., Green Island.
Geary, J., Kamo.
Gray, J., Abbotsford.
Harrison, J., Brunnerton.
Irving, J., Kaitangata.
Jemison, W., Waimangaroa.
Kenyon, J., Shag Point.
Kerr, G., Kamo.
Lindsay, W., Otago.
Lloyd, J., Invercargill.
Louden, J., Green Island.
Love, A., Whangarei.
Mason, J., Nightcaps.
May, J., Greymouth.
Moody, T. P., Kawakawa.
Moore, W. J., Springfield.
Nelson, J., Green Island.
Ord, J., Huntly.
Redshaw, W., Whangarei.
Reed, F., Westport.
Richardson, D., Abbotsford.
Shore, J., Kaitangata.
Shore, T., Orepuki.
Shore, W. M., Kaitangata.
Smart, W., Christchurch.
Smith, A. E., Nelson.
Smith, T. F., Nelson.
Sneddon, J., Mosgiel.
Swinbanks, J., Kawakawa.
Taylor, E. B., Huntly.
Thompson, A., White Cliffs.
Walker, J., Collingwood.
Williams, W. H., Shag Point.

First-class Certificates issued after Examination under the Coal-mines Acts, 1886 and 1891.

Armitage, F. W., Auckland.
Armstrong, J., Brunnerton.
Barclay, T., Kaitangata.
Barclay, W., Kaitangata.
Bennie, Boyd, Waihi.
Carruthers, J., Shag Point.
Carson, W., Kaitangata.
Coulthard, J., Taylorville.
Dixon, C. W., Granity.
Dixon, W., jun., Kaitangata.
Dunn, Andrew, Denniston.
Dunn, W., Brunnerton.
Dunn, W. R., Thames.
Elliott, R., jun., Denniston.
Fleming, J., Kaitangata.
Fletcher, James, Granity.
Fry, Sydney, Waimangaroa.
Gibson, John, Westport.
Gillanders, A., Shag Point.
Green, E. R., Abbotsford.
Green, J., Brunnerton.
Herd, J., Brunnerton.
Hill, Robert, Abbotsford.
Hosking, G. F., Auckland.
Hughes, D., Preservation Inlet.
Jebson, D., Canterbury.
Johnson, W. P., Thames.
Leitch, J., Blackball.
Leitch, W., Blackball.
McCormack, W., Denniston.
McEwan, Robert, Coromandel.
Milligan, N., Westport.
Morgan, Wm., Waihi.
Murray, T., Westport.
Newsome, F., Denniston.
Newton, James, Brunnerton.
Shore, Joseph, Kaitangata.
Sowerby, H., Denniston.
Tattley, E. W., Huntly.
Taylor, A. H., Waikato.
Turner, G. F., Shag Point.
Westfield, C. H., Fairfield.
Young, James H., Waimangaroa.

Mine-managers' Certificates, issued on Production of English Certificate, under "The Coal-mines Act, 1886."

Binns, G. J., Dunedin.
Black, T. H., Waipori.
Broome, G. H., Ngakawau.
Cater, T., Auckland.
Cochrane, N. D., Dunedin.
Garrett, J. H., Auckland.
Hayes, J., Kaitangata.
Hodgson, J .W., Ross.
Lindop, A. B., Springfield.
Macalister, J., Invercargill.
Nimmo, J., Oamaru.
Straw, M., Westport.
Tattley, W., Auckland.

First-class Mine-managers' Certificates, issued to Inspectors of Mines by virtue of Office, under the Coal-mines Acts of 1886 and 1891.

Coutts, J., Thames.
Gordon, H. A., Wellington.
Gow, J., Dunedin.
McLaren, J. M., Thames.
Wilson, G., Thames.

Mine-managers' Certificates, issued on Production of Certificate from a recognised Authority outside the Colony under "The Coal-mines Act, 1891."

Alison, R., Greymouth.
Dixon, J., Westport.
Fletcher, George, Westport.
Frame, Joseph, Kaitangata.
Goold, A. L., Auckland.
Irvine, James, Dunedin.
Jordan, R. S., Kaitangata.
Lewis, W., Blackball.
Pollock, James, Green Island, Otago.
Proud, Joseph, Wanganui.
Scott, Joseph, Ngahere.
Tennent, R., Brunnerton.
Twining, C. E., Dunedin.
Wight, E. S., Auckland.

SECOND-CLASS MINE-MANAGERS' SERVICE CERTIFICATES.

Issued under "The Coal-mines Act, 1891."

Carson, M., Kaitangata.
Collier, Levi, Kamo.
Clarke, Edward, Shag Point.
Elliot, Joseph, Coal Creek.
Harris, John, Denniston.
Herd, Joseph, Brunnerton.
Howie, James, Kaitangata.
Leeming, William, White Cliffs.
Lennox, W., Springfield.
Lobb, Joseph, Mokau.
Longstaff, H. C., Kaitangata.
Love, Alexander, Orepuki.
McGeachie, J., jun., Mokau.
McIntosh, Allan, Shag Point.
McLaren, J. M., Thames.
Marshall, J., Ngakawau.
Murray, Thomas, Denniston.
Nimmo, George Stewart, Ngapara.
Radcliffe, William, Reefton.
Roberts, John, Brunnerton.
Ross, John, Kawakawa.
Sara, James, Reefton.
Smith, Charles, Whangarei.
Thomas, James, Springfield.
Wallace, William, Huntly.
Willetts, John, Papakaio.
Willetts, John Morris, Papakaio.
Young, William, Waimangaroa.

Second-class Certificates issued after Examination under the Coal-mines Acts, 1886 and 1891.

Austin, W. B., Sheffield.
Barber, John, Shag Point.
Barclay, T., Kaitangata.
Barclay, Wm., Kaitangata.
Brown, Robert, Kaitangata.
Campbell, Peter, Fairfield.
Cherrie, R. C., Mokau.
Christie, James, Saddle Hill.
Clemo, G., Whangarei.
Craig, John, Coal Creek Flat.
Dixon, W., jun., Kaitangata.
Duncan, James, Kaitangata.
Duncan, John, Lovell's Flat.
Harris, A., Saddle Hill.
Hill, R., Abbotsford.
Hodson, John, Kaitangata.
Hunter, A., Southland.
Lindsay, J. B., Orepuki.
McAllister, Neil, Kaitangata.
McLelland, J., Kaitangata.
McLelland, A. C., Kaitangata.
McNeill, D., Fairfield.
Neilson, Moffat, Abbotsford.
Orr, Hugh, Fairfield.
Parcell, W., jun., Bannockburn.
Snow, T., Mercer.
Taylor, Joseph, Collingwood.
Waldie, A. B., Mokau.
Westfield, C., Fairfield, Otago.

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APPENDIX III.

Statistics of Workings in Coal-mines, 1902.

Name of Mine and Locality.	Name of Manager.	Number of Years worked.	Quality of Coal.	No. of Seams worked.	Thickness of Seams.	Thickness worked.	Dip of Seam.	System of Underground Working.	Number of Shafts.	Dimensions of Shafts.		Output delivered by	Output for 1902.			Approximate Total Output to 31st December, 1901.	Approximate Total Output to 31st December, 1902.	Number of Men ordinarily employed.			Power used for drawing Mineral.	Pumps.			Means of Ventilation.	Date of Inspector's Last Visit.
										Size of Shaft or Adit.	Depth of Shaft or Length of Adit.		Coal.	Slack.	Total.			Above.	Below.	Total.		Stroke.	Size of Barrel.	Height of Column.		
NORTH ISLAND.																										
Kawakawa District.													Tons.	Tons.	Tons.	Tons.	Tons.									
Kawakawa Company (*stopped*)	..	..	semi-bitum.	..	..	..	..	bord and pillar	..	..	..	..	..	..	..	794,865	794,865	..	..	..	..	..	..	..	..	..
Kawakawa Mine	Culley, John ..	4	ditto	1	4′	4′	1 in 6	ditto	2	6′ x 4′	150′	adit	3,640	..	3,640	59,329	62,969	1	5	6	horse	..	..	..	natural	7/11/02
Hikurangi District.																										
Hikurangi Coal Company ..	Moody, T. P. ..	10	„	1	7′ to 12′	7′ to 10′	1 in 6	„	2	6′ x 5′	264′	„	39,119	..	39,119	236,876	275,995	6	48	54	steam & horse	..	..	..	„	6/11/02
Northern Colliery (late Hikurangi Colliery)	Kerr, George ..	5	„	1	5′ 6″	5′ 3″	irregular	„	1	6′ x 5′	200′	„	7,946	..	7,946	44,982	52,928	7	21	28	manual & horse	..	..	..	„	6/11/02
West Bryan's and Phœnix ..	Goold, A. L. ..	14	„	1	7′	7′	1 in 8	„	2	7′ x 7′	250′	„	9,901	..	9,901	53,152	63,053	3	16	19	steam & horse	6″	3″	54′	„	6/11/02
Walton and Graham ..	.. ..	..	„	..	..	..	..	..	..	..	..	..	..	..	..	1,210	1,210	..	..	..	..	..	..	..	..	..
Whangarei District.																										
Kamo (*stopped*)	.. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	225,037	225,037	..	..	..	..	..	..	..	..	..
Kamo, New (*stopped*) ..	.. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	9,373	9,373	..	..	..	..	..	..	..	..	..
Whauwhau (*stopped*) ..	.. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	70,853	70,853	..	..	..	..	..	..	..	..	..
Ngunguru District.																										
Ngunguru	Taylor, A. H. ..	10	semi-bitum.	1	2′ to 5′	2′ to 5′	1 in 8	bord and pillar	3	4′ x 4′ 7′ x 7′	360′	adit	18,017	..	18,017	132,927	150,944	13	35	48	steam	..	..	..	natural	10/11/02
Kiripaka	Clemo, George ..	3½	ditto	1	3′ to 20′	12′	1 in 8	ditto	1	7′ x 5′	250′	„	14,138	..	14,138	28,853	42,991	2	11	13	manual	..	..	..	„	10/11/02
Waikato District.																										
Waikato Mine (*stopped*) ..	.. ..	..	brown	..	..	..	..	..	..	..	..	..	..	..	..	209,089	209,089	..	..	..	..	..	..	..	..	..
Taupiri Extended	Wight, E. S. ..	14½	„	1	30′	20′	1 in 10	bord and pillar	2	10′ dia.	166′	shaft	4,717	248	4,965	635,889	640,854	2	6	8	steam	24″ 12″	10″ 5″	166′ 210′	Waddle fan	25/9/02
Taupiri Reserve	„	15½	„	1	10′ to 24′	6′ to 8′	1 in 8	ditto	1	7′	209′ 50′	adit	28,162	3,690	31,852	230,131	261,983	13	47	60	„	12″	7″	220′	exhaust steam	26/9/02
Ralph's Taupiri	„	10½	„	1	30′ to 50′	20′	1 in 10	„	2	9′ 6″ x 5′ 8′ 6″ dia.	190′ 145′	shaft	51,690	756	52,446	124,039	176,485	20	85	105	„	12″ 24″	7″ 6″	190′ 260′	Waddle fan	25/9/02
Ralph's (*stopped*)	.. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	23,019	23,019	..	..	..	..	..	..	..	..	..
Harrison's (*worked out first six months*)	Harrison, J. ..	..	..	..	..	..	..	..	..	..	..	..	2,278	..	2,278	8,344	10,622	..	..	..	..	..	..	..	..	..
Mokau District.																										
Mangapapa Mokau Mine ..	Lobb, J. ..	18	brown	1	7′ 6″	7′ 6″	1 in 36	bord and pillar	1	6′ x 6′	990′	adit	4,250	..	4,250	25,322	29,572	3	12	15	horse	..	..	..	furnace	4/7/02
Fernside (*stopped*)	.. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3,265½	3,265½	..	..	..	..	..	..	..	..	..
Co-operative (*stopped*) ..	.. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	940	940	..	..	..	..	..	..	..	..	..

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Miranda District.																										
Miranda (*stopped*)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	20,668	20,668	..	..	..	..	..	..	..	..
Union Collieries (late Maramarua)	..	2	brown	1	50′	12′ to 20′	irregular	bord and pillar	2	4′ x 4′ 6′ x 6′	90′ 200′	adit	3,383	110	3,493	430	8,923	7	10	17	steam	12″ 6″	6″ 5″	90′ 90′	..	6/6/02
Bombay District.																										
Bombay (*stopped*)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	81½	81½	..	..	..	..	..	..	..	..
Totals North Island	..	..	..	..	..	..	..	..	..	..	..	..	187,241	4,804	192,045	2,938,675	3,130,720	77	296	373						

MIDDLE ISLAND.

Nelson.																										
Enner Glynn (*not at work*) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,337	1,337	..	..	..	..	..	..	..	..	..
Collingwood.																										
Pakawau (*not at work*) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4,873	4,873	..	..	..	..	..	..	..	..	..
Puponga	Walker, James ..	1	bitum.	1	7′ 6″	all	1 in 4	bord and pillar	1	9′ x 6′ 6″	..	hand	..	..	..	1,000	1,000	5	..	5	..	..	..	..	natural	17/12/02
Wallsend (*not at work*) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	47,413	47,413	..	..	..	..	..	..	..	..	..
Takaka.																										
Mines not at work.																										
Motupipi	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	130	130	..	..	..	..	..	..	..	..	..
Takaka	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	70	70	..	..	..	..	..	..	..	..	..
Westport.																										
Mokihinui	Ratcliff, W. ..	22	bitum.	2	7′ to 14′	all	1 in 16	bord and pillar	..	10′ x 6′	132′ 264′	adit	4,158	2,129	6,287	73,423	79,710	1	6	7	horse	..	..	..	natural	10/1/03
Millerton	Dunn, William ..	11	"	1	4′ to 40′	12′	variable	ditto	2	10′ x 6′	2,178′ 2,970′	inclined plane	253,123	23,627	276,750	657,977	934,727	94	331	425	gravity	12″ 12″ 12″	4″ 4″ 4″	40′ 40′ 100′	fan* fan† ..	6/11/02
Coalbrookdale	Green, John ..	22	"	2	4′ to 18′	all	"	"	2	8′ x 8′ 9′ x 5′	8,146′ 2,640′	ditto "	98,536	24,634	123,170	3,104,412	3,347,748	67	191	258	steam and compressed air	12″ 12″ 10″ 18″ 9″	6″ 5″ 4″ 6″ 2″	100′ 100′ 20′ 25′ 25′	fans* ..	30/10/02 31/10/02
Ironbridge	Sowerby, H. ..	11	"	2	6′ to 20′	all	"	"	2	8′ x 6′	9,048′	"	96,133	24,033	120,166			79	198	277						
Seddonville	Murray, Thomas	1	"	..	..	..	..	development only	1	10′ x 7′	726′	..	120	..	120	..	120	30	15	45	..	..	..	..	fan†	5/11/02
Flaxbush	Smith, Edward ..	..	"	2	1′ 6″ to 4′	all	1 in 1	stoping	..	..	..	adit	500	..	500	390	890	..	2	2	hand	..	..	..	natural	3/12/02
Westport Cardiff (*not at work*)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	227,441	227,441	..	..	..	..	..	..	..	..	..
Buller Road.																										
White Cliffs	Fleming, M. ..	8	brown	1	..	9′	1 in 3	pillar	2	9′ x 7′	100′	adit	150	..	150	980	1,130	..	1	1	windlass	..	..	.	natural	4/12/02
Rocklands	Fleming, A. ..	2	"	1	15′	8′	1 in 6	bord and pillar	2	8′ x 8′	990′	"	1,319	..	1,319	656	1,975	..	4	4	horse	..	..	..	"	4/12/02
Three-Channel Flat.																										
Cooksparrow (*not at work*) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	959	959	..	..	..	..	..	..	..	..	..
Charleston.																										
Waitakere (*not at work*) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	868	868	..	..	..	..	..	..	..	..	..
Longford.																										
Mines not at work.																										
Longford	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,830	1,830	..	..	..	..	..	..	..	..	..
Alexander	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	282	282	..	..	..	..	..	..	..	..	..

* Schiele. † Hayes.

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Statistics of Workings in Coal-mines, 1902—*continued*.

Name of Mine and Locality.	Name of Manager.	Number of Years worked.	Quality of Coal.	No. of Seams worked.	Thickness of Seams.	Thickness worked.	Dip of Seam.	System of Underground Working.	Number of Shafts.	Dimensions of Shafts.		Output delivered by	Output for 1902.			Approximate Total Output to 31st December, 1901.	Approximate Total Output to 31st December, 1902.	Number of Men ordinarily employed.			Power used for drawing Mineral.	Pumps.			Means of Ventilation.	Date of Inspector's Last Visit.
										Size of Shaft or Adit.	Depth of Shaft or Length of Adit.		Coal.	Slack.	Total.			Above.	Below.	Total.		Stroke.	Size of Barrel.	Height of Column.		
MIDDLE ISLAND—*continued*.																										
													Tons.	Tons.	Tons.	Tons.	Tons.									
BOATMAN'S.																										
Archer's Coal-mine ..	Archer, F. W. ..	9	bitum.	1	12′	9′	1 in 2½	bord and pillar	1	6′ 6″ x 4′	800′	tunnel	1,400	..	1,400	2,080	3,480	1	3	4	hand	..	..	..	natural	16/10/02
Coghlan's Coal-mine ..	Coghlan, John ..	1	"	1	8′ to 16′	7′	1 in 4	driving	1	7′ x 6′	210′	"	60	280	340	370	710	..	1	1	"	..	..	..	"	16/10/02
REEFTON.																										
Bourke's Creek	Cairns, Robert ..	5	semi-bitum.	1	8′ to 13′	8′	1 in 3	tunnels & bords	1	7′ x 5′	75′	tunnel	1,216	..	1,216	3,919	5,135	2	3	5	horse	..	..	..	"	13/10/02
Murray Creek	Morris, J. H. ..	23	ditto	1	14′	14′	1 in	open face	..	..	99′	..	..	1,434	1,434	10,515	11,949	2	..	2	"	..	..	..	"	14/10/02
Phœnix	Knight, John ..	11	bitum.	2	14′	9′	1 in 1	bord and pillar	1	6′ 6″ x 4′ 6″	600′	adit	1,481	129	1,610	15,721	17,331	1	5	6	"	..	..	..	"	14/10/02
New Inkerman	Sutherland, B. ..	5	semi-bitum.	1	5′	5′	1 in 3	stoping	1	6′ x 4′	420′	"	581	..	581	1,674	2,255	..	2	2	hand	..	..	..	"	7 /2/02
Progress New Mine ..	Cochrane, Thomas	5	ditto	2	3′ to 20′	3′ to 20′	1 in 3	bord and pillar	2	6′ x 10′	700′	"	2,117	..	2,117	11,689	13,806	2	3	5	"	..	..	..	"	14/10/02
Loughnan's	Loughnan, S. ..	10	"	1	4′ 6″	4′ 6″	1 in 3	ditto	1	8′ x 4′ 6″	150′	"	..	..	..	1,713	1,713	..	1	1	"	..	..	..	"	14/10/02
New Scotia	Masters, J. W. ..	1	brown	2	3′ to 6′	3′ to 6′	1 in 2	"	1	6′ 6″ x 3′ 6″	30′	"	62	..	62	..	62	..	2	2	"	..	..	..	"	6/2/02
Mines not at work.																										
Barr's Mine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	35	35	..	..	..	..	..	..	..	..	..
Devil's Creek	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	40	40	..	..	..	..	..	..	..	..	..
Lankey's Creek	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8,228	8,228	..	..	..	..	..	..	..	..	..
Golden Treasure	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6,625	6,625	..	..	..	..	..	..	..	..	..
Cochrane's	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	370	370	..	..	..	..	..	..	..	..	..
Reefton	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	40	40	..	..	..	..	..	..	..	..	..
Sir Francis Drake	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,173	2,173	..	..	..	..	..	..	..	..	..
Cumberland	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,070	1,070	..	..	..	..	..	..	..	..	..
Coal Creek	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	67	67	..	..	..	..	..	..	..	..	..
GREYMOUTH.																										
Blackball	Leitch, Walter ..	12	bitum.	2	17′	15′	1 in 5	bord and pillar	..	9′ x 6′	1,282′	adit	78,300	21,297	99,597	425,715	525,312	50	72	122	steam	5¾″	6″	90′	furnace	25/11/02
Brunner Mine	Coulthard, John..	38	"	1	10′ to 12′	all	1 in 4	ditto	..	10′ x 7′	1,000′	"	90,290	26,424	116,714	1,846,446	1,963,160	35	110	145	"	..	..	..	Scheile fan	14/11/02
Tyneside	Armstrong, James	20	"	1	12′	12′	1 in 4	"	1	10′ dia.	90′	shaft	283	..	283	18,398	18,681	4	7	11	"	pulsometer pump	No. 10		natural	..
Point Elizabeth	Herd, Joseph ..	..	"	..	..	..	..	..	4	3 10′ x 7′ 1 7′ x 7′	..	adit	..	..	..	..	..	9	27	36	"	..	..	..	fan	29/11/02
Mines not at work.																										
Coal-pit Heath	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	577,190	577,190	..	..	..	..	..	..	..	..	..
Wallsend	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	205,539	205,539	..	..	..	..	..	..	..	..	..

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CANTERBURY.																										
Springfield, Springfield ..	Horsley, J. ..	26	brown	1	3′ 3″	all	1 in 6	bord and pillar	2	6′ 6″ x 4′	70′	shaft	1,217	..	1,217	86,031	87,248	1	5	6	steam	direct steam	acting	exhaust from pump	9/10/02
Victoria, Springfield ..	Cloudesley, W. J.	2	"	1	3′	"	1 in 6	longwall	1	4′ 6″ x 3′	50′	adit	210	..	210	43	253	2	2	4	horse	..	..	natural	15/9/02
Campbell's, Springfield ..	Campbell, P. ..	0½	"	1	2′	"	..	"	..	..	..	"	110	..	110	..	110	2	..	2	..	..	..	"	15/9/02
Homebush, Glentunnel ..	Campbell, J. C. ..	30	"	2	3′ and 7′	"	1 in 3	bord and pillar	..	6′ x 6 ′	40 ch.	tunnel	8,578	627	9,205	132,559	141,764	4	19	23	horse & steam	..	..	"	10/10/02
St. Helen's, White Cliffs ..	Levick, H. ..	21	"	3	4′ 6″ 3′ 2′ 10″	"	1 in 3	pillar, stope, and wall	1	4′ 6″ x 3′ 7″	32′ 5 ch.	adit	1,249	..	1,249	8,814	10,063	1	3	4	hand	..	..	"	10/10/02
Brockley, Glenroy	Lee, H. ..	2	"	1	3′ 6″	"	vertical	..	..	..	..	..	95	..	95	60	155	1	1	2	horse	..	..	"	16/9/02
Mount Somers, Mount Somers	Thompson, A. ..	38	"	1	35′	10′	1 in 9	bord and pillar	..	..	..	adit	4,695	731	5,426	39,238	44,664	3	11	14	"	..	..	"	18/9/02
Albury, Albury	Willetts, J. M. ..	11	"	1	22′	10′	1 in 1	ditto	..	4′ x 3′ 6″	68′	shaft	870	40	910	3,584	4,494	2	2	4	"	..	..	"	19/9/02
Elephant Hill, Waihao Downs	Adamson, A. ..	34	lignite	1	..	..	..	..	..	..	..	..	50	..	50	130	180	..	1	1	..	..	..	"	..
Waihao, Waihao Forks ..	Adamson, A. ..	13	"	1	4′	all	..	bord and pillar	..	..	..	adit	688	..	688	597	1,285	2	2	4	..	..	..	"	..
Private Pits.																										
Dalethorpe, Springfield ..	Nuthall, A. J. ..	8	"	1	..	..	..	..	..	..	..	..	34	..	34	217	251	..	..	..	..	..	..	"	..
Snowdon, Rakaia Gorge ..	Gerard, G. ..	17	"	1	14′	8′	..	narrow	1	4′ x 4′	90′	shaft	100	..	100	1,518	1,618	..	..	..	..	..	..	"	..
Craigieburn, West Coast Road	Manson, D. ..	6	brown	1	..	..	..	..	..	..	..	adit	35	..	35	148	183	..	..	..	..	..	..	"	..
Springburn Lime Company, Staveley	Scott, R. L., Secretary, Ch'stch'ch	..	..	..	..	12′	..	..	..	..	..	"	115	..	115	250	365	..	..	..	..	..	..	"	..
McKenzie's Castle Hill ..	McKenzie, J. ..	1	..	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..	..	..	..
Waihao Forks, Waihao Forks	McPherson, D. ..	10	lignite	1	..	..	..	open	..	..	..	open	..	..	..	226	226	..	..	..	..	..	..	..	..
Pits not at work.																										
Wairiri, South Malvern ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,213	1,213	..	..	..	..	..	..	..	..
Acheron, Lake Coleridge ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	503	503	..	..	..	..	..	..	..	..
Kowai Pass, Springfield ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	559	559	..	..	..	..	..	..	..	..
Glenroy, South Malvern ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	115	115	..	..	..	..	..	..	..	..
White Cliffs, South Malvern	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	33,051	33,051	..	..	..	..	..	..	..	..
Duke's (Park Gate) Kakahu	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	916	916	..	..	..	..	..	..	..	..
Spring Vale, Fairlie Creek ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	200	200	..	..	..	..	..	..	..	..
Mount Hutt, Rakaia Gorge ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	155	155	..	..	..	..	..	..	..	..
Sheffield, Sheffield	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	52,284	52,284	..	..	..	..	..	..	..	..
Hartley, White Cliffs ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,991	1,991	..	..	..	..	..	..	..	..
NORTH OTAGO.																										
Rocky Point, Hakataramea ..	MacFarlane, D. ..	3	brown	1	..	..	..	..	..	..	..	..	55	..	55	125	180	1	..	1	..	..	..	natural	..
Awakino, Kurow	Orr, G. ..	23	"	1	15′	7′	vertical	stoping	1	6′ x 2′ 6″	58′	adit	22	..	22	5,585	5,607	1	..	1	..	..	..	"	10/7/02
Wharekuri, Wharekuri ..	Shanks, A. ..	..	"	1	40′	..	"	..	..	..	..	"	152	..	152	1,216	1,368	1	..	1	..	..	..	"	10/7/02
Otiake, Otiake	Simpson and Cunningham	2	"	1	..	..	"	..	..	..	..	..	48	..	48	32	80	..	1	1	..	..	..	"	10/7/02
St. Andrew's, Papakaio ..	Nimmo, T. ..	24	"	1	6′ 6″	6′	1 in 4	bord and pillar	1	4′ x 2′ 6″	60′	adit	1,926	..	1,926	29,465	31,391	1	4	5	horse	..	..	"	9/9/02
Prince Alfred, Papakaio ..	Willetts, J. ..	33	"	1	1′ to 9′	1′ to 9′	1 in 9	ditto	1	5½′ x 6′	51′	"	1,274	..	1,274	45,342	46,616	2	5	7	"	..	..	"	9/9/02
Ngapara, Ngapara	Nimmo, W. ..	24	"	1	18′ to 25′	8′	1 in 17	"	1	4′ x 4′	50′	"	836	..	836	18,103	18,939	1	2	3	"	..	..	furnace	11/9/02
Shag Point, Shag Point ..	Shore, T. ..	32	pitch	6	2′ to 6′	all	1 in 4	ditto and longwall	2	16½′ x 6′ 7½′ x 5′	415′ 280′	shaft	260	69	329	401,443	401,772	12	40	52	steam	2′	8″	400′ exhaust steam	16/12/02
Allandale, Shagpoint ..	Westfield, C. H. ..	15	"	3	4′ to 6′	"	1 in 4	bord and pillar	..	10′ x 6′ 8′ x 4′	1,000′ 280′	dip tunl.	17,209	7,707	24,916	165,439	190,355	12	63	75	"	1′	6″	200′ ditto and natural	19/12/02
Pits not at work.																										
Phillips, Kurow	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,985	1,985	..	..	..	..	..	..	..	..
Wharekuri (Colline), Kurow ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,424	1,424	..	..	..	..	..	..	..	..
Rosebery, Otepopo	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,424	1,424	..	..	..	..	..	..	..	..
Earlybank	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	281	281	..	..	..	..	..	..	..	..
Cairns, Kurow .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	11,895	11,895	..	..	..	..	..	..	..	..

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STATISTICS of WORKINGS in COAL-MINES, 1902—*continued*.

Name of Mine and Locality.	Name of Manager.	Number of Years worked.	Quality of Coal.	No. of Seams worked.	Thickness of Seams.	Thickness worked.	Dip of Seam.	System of Underground Working.	Number of Shafts.	Dimensions of Shafts. Size of Shaft or Adit.	Dimensions of Shafts. Depth of Shaft or Length of Adit.	Output delivered by	Output for 1902. Coal.	Output for 1902. Slack.	Output for 1902. Total.	Approximate Total Output to 31st December, 1901.	Approximate Total Output to 31st December, 1902.	Number of Men ordinarily employed. Above.	Number of Men ordinarily employed. Below.	Number of Men ordinarily employed. Total.	Power used for drawing Mineral.	Pumps. Stroke.	Pumps. Size of Barrel.	Pumps. Height of Column.	Means of Ventilation.	Date of Inspector's Last Visit.
MIDDLE ISLAND—*continued*.													Tons.	Tons.	Tons.	Tons.	Tons.									
SOUTH OTAGO.																										
Fernhill, Abbotsford ..	Gray, J. ..	25	brown	1	19′	10′	1 in 10	bord and pillar	1	4½′ x 4½′	..	adit	332	2,137	2,469	133,318	135,787	3	4	7	horse	..	..	..	natural	3/9/02
Freeman's, Abbotsford ..	Hill, R. ..	22	"	2	7′ to 14′	6′ to 7′	1 in 7	ditto	3	6′ x 5′ 7′ x 7′	1,400′ 264′	tunnels	5,594	3,637	9,231	255,335	264,566	6	17	23	steam & horse	12″	5″	130′	exhaust steam from pump	23/10/02
Walton Park, Walton Park ..	Kenyon, J. ..	32	"	1	10′ to 19′	12′	1 in 10	"	3	6′ x 4′ 12′ x 4′	30′ to 170′	"	10,956	631	11,587	554,231	565,818	4	15	19	horse	..	..	..	furnace	23/10/02
Jubilee, Walton Park ..	Campbell, P. ..	5	"	1	12′ to 18′	8′	1 in 10	"	2	6′ x 5′	4 ch.	"	9,022	1,261	10,283	30,657	40,940	2	16	18	steam & horse	..	..	..	natural	2/9/02
Saddle Hill (No. 1), Saddle Hill	Christie, W. H. L.	30	"	1	20′	8′ to 16′	1 in 10	"	4	5′ 10″ x 4′ 6″	264′	"	3,360	4,104	7,464	117,234	124,698	3	11	14	horse & steam	..	..	..	"	4/7/02
Saddle Hill (No. 2), Saddle Hill	Barber, J. ..	1	"	..	..	..	..	..	..	..	..	"	1,004	3,487	4,491	..	4,491	2	7	9	ditto	..	..	..	"	4/7/02
Burnweil, Fairfield ..	Harris, A. ..	11	"	1	16′	10′	variable	bord and pillar	1	5′ x 3′	30′	"	1,060	1,789	2,849	18,700	21,549	2	4	6	"	..	..	..	"	13/5/02
Glenochiel, Fairfield ..	Bryce, D. ..	21	"	1	16′	7′ to 9′	1 in 9	ditto	3	6′ x 4′	4 ch.	"	..	2,000	2,000	24,756	26,756	3	2	5	"	..	..	..	"	13/5/02
Mosgiel, Mosgiel	Sneddon, J. ..	18	"	1	8′	7′	1 in 10	"	2	4′ x 4′	14 ch.	"	800	2,056	2,856	89,778	92,634	3	4	7	steam	4′	4″	70′	"	13/5/02
Riccarton, East Taieri ..	Vickers, J. ..	2	"	1	..	..	..	"	..	..	300′	"	545	2,047	2,592	414	3,006	4	6	10	steam & horse	..	..	..	"	13/5/02
Lauriston, Brighton ..	Walker, J. R. ..	16	"	1	6′	5′ 6″	variable	"	1	..	48′	"	162	38	200	5,437	5,637	1	1	2	horse	..	..	..	"	2/9/02
McColl's, Brighton.. ..	McColl, D. L. ..	14	"	1	6′	5′ 6″	"	"	..	..	..	..	87	35	122	1,181	1,303	1	1	2	"	..	..	..	"	2/9/02
Bruce, Milton	Young, A. ..	35	"	1	15′	9′	1 in 8	"	..	..	..	adit	418	..	418	23,481	23,899	..	2	2	hand	..	..	..	"	26/9/02
Strip-and-at-it, Milton ..	Hardwick, N. ..	8	"	1	8′	6′	..	"	..	..	..	"	8	..	8	692	700	..	1	1	"	..	..	..	"	26/9/02
Reid's, Akatore, Milton ..	Reid, James ..	8	"	1	14′	all	..	"	..	..	..	"	..	..	..	244	244	..	..	..	..	..	..	..	"	..
Fortification, Milton ..	Straw, M. ..	5	"	1	14′	7′ 6″	1 in 12	"	2	7′ x 6′ 6′ x 6′	4½ ch. 11½ ch.	..	12,808	3,714	16,522	10,867	27,389	15	15	30	steam	6″	4″	30′	"	26/9/02
Glenledi, Milton	McGilp, N. ..	..	"	1	20′	all	1 in 8	open	..	..	..	open	384	..	384	1,741	2,125	1	..	1	hand	..	..	..	"	26/9/02
Adam's Flat, Adam's Flat ..	Reid, J. ..	20	lignite	1	14′	10′	..	"	..	..	..	"	40	..	40	2,171	2,211	1	..	1	"	..	..	..	"	26/9/02
Paskell's, Adam's Flat ..	Paskell, J. ..	38	"	1	8′	all	1 in 6	"	..	..	..	"	4	..	4	464	468	1	..	1	"	..	..	..	..	26/9/02
Wallsend, Lovell's Flat ..	Hewitson, R. ..	32	"	1	20′	..	..	"	..	..	..	"	194	..	194	10,760	10,954	1	..	1	"	..	..	..	..	18/6/02
Lovell's Flat, Lovell's Flat ..	Carruthers, J. ..	8	brown	1	5′ to 10′	5′ to 7′	1 in 4	bord and pillar	2	11′ x 5′	470′	shaft	8,985	6,677	15,662	42,144	57,806	10	34	44	steam	16″	6″	480′	exhaust steam from pump & furnace	25/9/02
Benhar, Stirling	McLeod, J. ..	39	lignite	1	30′	12′	..	ditto	2	4′ x 4′	..	incline	2,261	536	2,797	98,780	101,577	1	5	6	horse	..	..	..	natural	18/6/02
Mount Wallace, Stirling ..	Shaw, D. ..	8	"	1	14′	8′ to 10′	..	"	..	..	..	adit	551	..	551	3,595	4,146	..	1	1	hand	..	..	..	"	18/6/02
Taratu-Kaitangata ..	Longstaff, H. C...	1	brown	..	..	7′ to 9′	..	"	..	..	5 ch.	"	2,739	44	2,783	..	2,783	2	10	12	"	..	..	..	"	12/12/02
Kaitangata (including Castle Hill), Kaitangata	Barclay, T. ..	26	"	2	6′ to 30′	all	variable	"	1	9′ x 7′	1,100′	incline	88728	39,332	118,050	1,523,207	1,641,257	50	282	332	steam	..	..	..	furnace	11/12/02
		9	"	2	6′ to 25′	"	"	"	1 1	6′ diam. 11′ x 6′ 6″ 10′ diam.	3,236′	"									"				"	10/12/02
Longridge, Kaitangata ..	Mackie, N. ..	1	"	1	4′	"	..	"	..	..	..	..	45	..	45	..	45	1	2	3	..	..	..	..	natural	21/11/02
Wangaroa, Kaitangata ..	Smith, J. ..	22	"	1	10′ 6″	8′	1 in 6	"	..	..	..	adit	44	16	60	1,396	1,456	..	1	1	hand	..	..	..	"	28/8/02
Mainholm, Waipahi ..	Lischner, F. ..	17	lignite	1	15′	all	..	open	..	..	..	open	3,648	..	3,648	29,116	32,764	3	..	3	"	..	..	..	..	4/5/02

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Private Pits.																									
Fairbairn's, Taieri Beach	Fairbairn, R.	..	brown	..	..	..	..	..	..	..	..	..	450	30	480	..	480	1	..	1	hand	..	..	..	natural	..
Taratu, Kaitangata	Frazer, H. H.	30	"	1	..	..	..	..	..	..	..	..	12	2	14	204	218	..	..	..	..	..	..	..	"	..
Lakeside, Kaitangata	Landells, James	2	"	..	..	..	..	..	..	..	..	..	107	..	107	720	827	..	..	..	..	..	..	..	"	..
Tuakitoto, Lovell's Flat	Dunlop, R.	12	"	1	20′	8′	..	bord and pillar	1	..	..	incline	27	..	27	3,072	3,099	..	..	..	..	..	..	..	"	20/6/02
Pits not at work.																									
Record, Kaitangata	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	414	414	..	..	..	..	..	..	..	..	..
Early Rise, Milton	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	15	15	..	..	..	..	..	..	..	..	..
Chain Hills, Abbotsford	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	842	842	..	..	..	..	..	..	..	..	..
Salisbury, Mosgiel	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4,433	4,433	..	..	..	..	..	..	..	..	..
Bruce No. 2, Milton	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	23,322	23,322	..	..	..	..	..	..	..	..	..
Rigfoot, Stirling	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5,163	5,163	..	..	..	..	..	..	..	..	..
Morrison's, Stirling	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	646	646	..	..	..	..	..	..	..	..	..
Pomahaka, Pomahaka	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	20	20	..	..	..	..	..	..	..	..	..
Castle Hill No. 1, Kaitangata	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	9,314	9,314	..	..	..	..	..	..	..	..	..
Crofthead, Kaitangata	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6,713	6,713	..	..	..	..	..	..	..	..	..
Langridge, Kaitangata	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	693	693	..	..	..	..	..	..	..	..	..
Lesmahagow, Kaitangata	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,511	1,511	..	..	..	..	..	..	..	..	..
Cowpan's, Owaka	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	95	95	..	..	..	..	..	..	..	..	..
Shennan's, Waipahi	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	45	45	..	..	..	..	..	..	..	..	..
Early Bank, Milton	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	320	320	..	..	..	..	..	..	..	..	..
CENTRAL OTAGO.																									
Coal Creek, Roxburgh	Barclay, Wm.	32	lignite	1	80′	20′	variable	bord and pillar	..	..	..	adit	5,886	..	5,886	21,238	27,124	4	8	12	horse	..	..	..	natural	14/11/02
McPherson's, Roxburgh	McPherson, M.	32	"	1	80′	30′ to 40′	"	open	..	..	..	open	3,656	..	3,656	24,774	28,430	1	4	5	"	..	..	..	..	4/10/02
Perseverance, Roxburgh	Craig, J.	15	"	1	99′	70′	1 in 4	narrow	..	6′ x 7′	..	adit	3,247	..	3,247	16,083	19,330	1	4	5	Pelton wheel	..	..	..	natural	4/10/02
Knott and Gordon's Gully Pit, Roxburgh	Knott and Gordon	5	"	..	..	..	..	open	..	..	..	open	7	..	7	482	489	1	..	1	..	..	..	..	..	4/10/02
Drummey's, Alexandra	Drummey, J.	..	brown	..	..	..	..	..	..	..	..	shaft	..	..	..	179	179	..	..	..	horse	..	..	..	natural	11/11/02
Alexandra, Alexandra	O'Connell, M.	22	"	1	14′	7′	..	bord and pillar	2	5′ x 2′ 6″ 6′ x 4′	60′	adit	577	..	577	37,753	38,330	2	..	2	"	..	..	..	"	11/11/02
Perseverance, Alexandra	Hunter, A.	..	"	..	..	..	..	ditto	..	..	..	"	4,928	..	4,928	6,385	11,313	2	7	9	steam	..	..	..	"	11/11/02
McQueenville, Alexandra	Howie, J.	15	"	1	14′	7′	..	"	2	4′ 9″ x 3′	62′	shaft & adit	3,950	..	3,950	35,572	39,522	1	4	5	horse	..	..	..	"	9/10/02
Alexandra Coal Company, Alexandra	Carson, W.	..	"	1	28′	8′	..	"	1	6′ x 4′	60′	shaft	9,912	..	9,912	18,085	27,997	6	16	22	steam	three-ram 12″	throw pump 6″	60′	"	12/11/02
Undaunted, Alexandra	Mathias, D. H.	4	"	1	7′	6′	in	"	1	5′ x 2′ 6″	70′	adit	1,384	..	1,384	559	1,943	1	4	5	horse	..	..	..	"	11/11/02
Cambrian's, Cambrian's	Dungey, C.	18	lignite	1	9′	all	..	open	..	..	..	open	117	..	117	13,985	14,102	1	..	1	"	..	..	..	..	9/12/02
Welshman's Gully, Cambrian's	McGuckin, J. & R.	41	"	1	90′	"	..	"	..	..	..	"	959	..	959	29,516	30,475	3	..	3	"	..	..	..	..	9/12/02
Blackstone Hill, Blackstone Hill	Thurlow, R.	36	"	1	unknown	16′	..	"	..	..	..	"	550	..	550	2,467	3,017	2	..	2	"	..	..	..	..	10/12/02
St. Bathan's, St. Bathan's	Enwright, J.	5	"	1	"	..	..	"	..	..	..	"	437	..	437	1,949	2,386	2	..	2	"	..	..	..	..	10/12/02
Beck's Idaburn, Idaburn	Beck, M.	16	"	1	35′	all	..	"	..	..	..	"	644	..	644	14,725	15,369	3	..	3	"	..	..	..	..	10/12/02
McLean's, Idaburn	McLean, L.	..	"	1	15′	"	..	"	..	..	..	"	..	..	..	1,127	1,127	..	..	..	"	..	..	..	..	10/12/02
Idaburn, Idaburn	White, J.	32	"	1	20′	"	..	"	..	..	..	"	1,009	..	1,009	32,555	33,564	3	..	3	"	..	..	..	natural	10/12/02
Border, Rough Ridge	Turnbull, G.	32	"	1	12′	"	..	"	..	..	..	"	235	..	235	6,778	7,013	2	..	2	"	..	..	..	"	4/12/02
Gimmerburn, Gimmerburn	Docherty, C.	37	"	1	12′	"	..	"	..	..	..	"	48	..	48	2,605	2,653	1	..	1	hand	..	..	..	"	12/1/02
Commercial, Kyeburn	Archer, C.	23	brown	1	10′	8′	vertical	stoping	..	..	..	shaft	451	..	451	14,021	14,472	1	2	3	water wheel	..	..	..	"	12/12/02
Dairy Creek, Clyde	McAllister, N.	30	"	1	40′	14′	1 in 2	levels	..	..	..	dip incline	2,512	..	2,512	8,070	10,582	1	4	5	steam	..	..	..	"	13/10/02
Clyde Coal Company, Clyde	Turner, G.	..	"	..	40′	14′	1 in 2	"	..	..	..	ditto	5,255	..	5,255	10,948	16,203	2	9	11	"	..	..	..	"	13/10/02
Cardrona, Cardrona	McDougall, R.	18	"	1	90′	all	vertical	open	..	..	..	open	1,879	..	1,879	10,944	12,823	7	..	7	horse	..	..	..	..	21/10/02
Gibbston, Gibbston	Hodson, J.	16	"	1	90′	"	1 in 2	bord and pillar	..	..	..	adit	1,883	70	1,953	6,391	8,344	3	7	10	steam	..	..	..	natural	28/10/02
Doolan's Creek, Doolan's Creek	Murray, A. C. (Sec., Cromwell)	1	"	..	..	..	..	..	1	..	..	..	25	..	25	..	25	1	2	3	"	..	..	..	"	28/10/02

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Statistics of Workings in Coal-mines, 1902—*continued.*

Name of Mine and Locality.	Name of Manager.	Number of Years worked.	Quality of Coal.	No. of Seams worked.	Thickness of Seams.	Thickness worked.	Dip of Seam.	System of Underground Working.	Number of Shafts.	Dimensions of Shafts.		Output delivered by	Output for 1902.			Approximate Total Output to 31st December, 1901.	Approximate Total Output to 31st December, 1902.	Number of Men ordinarily employed.			Power used for drawing Mineral.	Pumps.			Means of Ventilation.	Date of Inspector's Last Visit
										Size of Shaft or Adit.	Depth of Shaft or Length of Adit.		Coal.	Slack.	Total.			Above.	Below.	Total.		Stroke.	Size of Barrel.	Height of Column.		
MIDDLE ISLAND—*continued.*																										
CENTRAL OTAGO—*continued.*													Tons.	Tons.	Tons.	Tons.	Tons.									
Kawarau, Bannockburn	Cromwell and Bannockburn Collieries Company. A. Gillanders, Mine Manager	25	brown	1	10′	6′	1 in 4	bord and pillar	1	6′ x 6′	34′	incline	2,477	..	2,477	29,282	31,759	5	10	15	steam	..	..	..	natural	5/11/02
Excelsior, Bannockburn		10	"	1	6′	5′	1 in 4	ditto	1	6′ x 5½′	..	"	3,037	..	3,037	12,355	15,392	6	9	15	"	..	..	..	"	5/11/02
Bannockburn, Bannockburn		13	"	1	6′	5′	1 in 4	"	1	6′ x 4′	20′	adit	4,672	..	4,672	6,634	11,306	6	10	16	"	..	..	..	"	5/11/02
Nevis, Nevis	Scott, C. ..	9	"	1	20′	all	vertical	open	..	..	..	open	565	..	565	3,139	3,704	2	..	2	hand	..	..	..	..	4/11/02
Ryder's, Nevis	Scott, C. ..	..	"	..	..	all	..	"	..	..	..	"	334	..	334	1,694	2,028	1	..	1	"	..	..	..	..	4/11/01
Clough and Allen's, Nevis ..	Holmes, A. ..	..	"	..	..	..	..	"	..	..	..	"	24	..	24	288	312	1	..	1	"	..	..	..	..	4/11/02
Ritchie's, Nevis	Ritchie, Jas. ..	..	..	..	..	..	..	"	..	..	..	"	30	..	30	88	118	1	..	1	"	..	..	..	..	4/11/02
Private Pits.																										
Price's, Blackstone Hill ..	Price, G. ..	5	lignite	1	12′	all	..	"	..	..	..	"	22	..	22	64	86	..	..	..	"	..	..	..	..	20/2/02
Kyeburn, Upper Kyeburn ..	McCready and Coombs	..	brown	..	..	..	..	"	..	..	..	"	13	19	32	15,335	15,367	..	..	..	"	..	..	..	..	..
Angel's, Bannockburn ..	Angel, C. F. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	5/11/02
Pits not at work.																										
Black Diamond, Roxburgh ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	232	232	..	..	..	..	..	..	..	..	..
Simpson Theyers, Alexandra	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,636	1,636	..	..	..	..	..	..	..	..	..
Cromwell, Cromwell ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3,019	3,019	..	..	..	..	..	..	..	..	..
Cooper's, Cromwell ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	385	385	..	..	..	..	..	..	..	..	..
Upper Nevis, Nevis ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	65	65	..	..	..	..	..	..	..	..	..
Williamson's, Nevis ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	95	95	..	..	..	..	..	..	..	..	..
Padgett's, Blackstone Hill ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	46	46	..	..	..	..	..	..	..	..	..
Waikerikeri, Clyde ..	Dunstan Coal Co. (Smart, J., sec.)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	20,322	20,322	..	..	..	..	..	..	..	..	..
Enterprise, Alexandra ..	(Rivers) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	703	703	..	..	..	..	..	..	..	..	..
Fennessy's, Idaburn ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	70	70	..	..	..	..	..	..	..	..	..
Cairnmuir, Bannockburn ..	(Crow & Anderson)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,451	1,451	..	..	..	..	..	..	..	..	..
Cooper & Gibson's, Bannock'rn	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5,395	5,395	..	..	..	..	..	..	..	..	..
Gibbston, Gibbston ..	(Cowan's) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	19,464	19,464	..	..	..	..	..	..	..	..	..
Harrex and Owen's, Cambrian's	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	60	60	..	..	..	..	..	..	..	..	..
Blackman's Gully, Clyde ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	144	144	..	..	..	..	..	..	..	..	..
Nulli Secundus, Bannockburn	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	632	632	..	..	..	..	..	..	..	..	..
Blackman's, Alexandra ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	89	89	..	..	..	..	..	..	..	..	..
Gibson's, Bannockburn ..	Gibson, J. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	220	220	..	..	..	..	..	..	..	..	..
Watherston's, Nevis ..	Watherston, A. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	5	..	..	..	..	..	..	..	..	..
SOUTHLAND.																										
Pukerau, Pukerau	O'Hagan, C. ..	22	lignite	1	16′	8′ to 10′	in 10	bord and pillar	1	8′ x 8′	11 ch.	adit	916	..	916	28,684	29,600	1	3	4	horse	..	..	..	natural	3/5/02
Nelson's, Pukerau	Nelson, J. H. ..	13	"	1	16′	all	..	ditto	..	..	..	"	279	..	279	2,566	2,845	2	..	2	hand	..	..	..	"	3/5/02
Whiterigg, Gore ..	Hope, J. ..	20	"	1	20′	15′	1 in 20	"	1	3′ 6″ x 2′ 6″	2 ch.	"	2,058	..	2,058	8,813	10,871	2	4	6	horse	..	..	..	"	13/8/02
Heffernan's, Gore	Hoffman, T. ..	24	"	1	30′	15′	..	open	..	..	..	open	903	..	903	5,944	6,847	1	2	3	hand	..	..	..	..	30/8/02
Gutschlag's, Gore	Gutschlag, W. ..	19	"	1	10′	all	..	"	..	..	..	"	20	..	20	3,274	3,294	1	..	1	"	..	..	..	..	..
Sarginson's, Gore	Reinke, A. ..	16	"	1	7′	"	..	"	..	..	..	"	748	..	748	1,819	2,567	2	..	2	"	..	..	..	..	1/5/02

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Green's, Gore	Smyth, J. J. ..	14	lignite	1	22′	17′	1 in 20	bord and pillar	..	..	5 ch.	adit	4,275	..	4,275	26,366	30,641	..	6	6	horse	..	..	..	natural	1/5/02
Knapdale, Chatton ..	Irvine, W. ..	17	"	1	26′	15′	almost vertical	wide headings	..	..	..	"	59	..	59	6,301	6,360	..	1	1	"	..	..	..	"	29/8/02
Perkin's, East Chatton ..	Perkins, A. ..	3	"	..	..	..	..	open	..	..	..	open	300	..	300	550	850	2	..	2	hand	..	..	..	..	2/5/02
Harvey's, Chatton	Harvey, J. ..	25	"	1	16′ to 26′	16′ to 18′	..	"	..	..	..	"	..	..	..	13,586	13,586	..	..	..	..	..	..	..	..	29/8/02
Pacey's, East Chatton ..	Pacey, R. ..	26	"	1	unknown	14′	1 in 6	"	..	..	..	"	1,010	..	1,010	11,670	12,680	3	..	3	hand	..	..	..	..	2/5/02
Johnstone's, Waikaka Valley	Johnstone, W. ..	9	"	1	11′	all	..	"	..	..	..	"	1,939	..	1,939	2,719	4,658	3	..	3	"	..	..	..	..	28/8/02
Thorndale, Waikaka Valley..	Orchard, E. C. ..	3	"	..	..	..	..	"	..	..	..	"	543	..	543	822	1,365	4	..	4	"	..	..	..	..	1/5/02
Reid's, Waikaka Valley ..	Reid, R. ..	6	"	1	..	all	..	"	..	..	..	"	2,113	..	2,113	2,456	4,569	5	..	5	"	..	..	..	..	28/8/02
Glenlee, Waikaka	McGill, J. ..	9	"	1	14′	"	..	"	..	..	..	"	1,361	..	1,361	1,852	3,213	3	..	3	"	..	..	..	..	30/4/02
McDonald's, Wendon Valley	Nicol, D. ..	..	"	1	..	..	..	adit	..	..	..	adit	1,220	73	1,293	1,296	2,589	4	..	4	"	..	..	..	natural	25/10/02
Wendon, Wendon Valley ..	Edge, A. A. ..	24	"	1	16′	all	..	"	..	..	..	"	..	..	..	5,432	5,432	..	..	..	"	..	..	..	"	30/4/02
Muddy Terrace (shale pit), Waikaia	Haseldine, J. M.	1	"	..	..	..	..	open	..	..	..	open	411	..	411	..	411	1	..	1	"	..	..	..	..	12/5/02
Monaghan's, Landslip, Waikaia	Monaghan, R. ..	3	"	..	..	..	..	"	..	..	..	"	556	..	556	74	630	2	4	6	"	..	..	..	..	12/5/02
McIvor's, Landslip, Waikaia	McIvor, W. ..	11	"	1	15′	all	..	"	..	..	..	"	475	..	475	2,025	2,500	2	..	2	"	..	..	..	..	12/5/02
Goldie's, Landslip, Waikaia..	McIvor, R. ..	..	"	..	..	..	..	"	..	..	..	"	120	..	120	268	388	2	..	2	"	..	..	..	..	12/5/02
Number One, Landslip, Waikaia	McKinnon, A. ..	3	"	..	..	..	..	"	..	..	..	"	231	..	231	248	479	1	..	1	"	..	..	..	..	10/5/02
Argyle, Waikaia	Baxter, J. and T.	11	"	1	10′	all	..	"	..	..	..	"	248	..	248	1,880	2,118	1	..	1	"	..	..	..	..	12/5/02
Coal Creek, Wendonside ..	Stevenson, J. ..	1	"	..	..	..	..	"	..	..	..	"	40	..	40	..	40	..	..	..	"	..	..	..	..	30/8/02
Waimea, Longridge Village, Waimea	Larsen, P. ..	12	"	1	8′	..	..	"	..	..	..	"	438	..	438	7,164	7,602	2	..	2	"	..	..	..	..	30/8/02
Pyramid, Mandeville ..	McAllister, E. ..	10	brown	1	18′	9½′	1 in 2	bord and pillar	..	..	..	adit	12	..	12	1,622	1,634	..	1	1	"	..	..	..	natural	30/8/02
Waimumu, Mataura ..	Sleeman, C. P. ..	26	lignite	1	16′	all	..	open	..	..	..	open	9,452	..	9,452	47,345	56,797	7	2	9	"	..	..	..	..	25/8/02
Bogside, Mataura.. ..	Mutch and Hurst	6	"	1	16′	13′	..	"	..	..	..	"	214	..	214	2,666	2,880	2	..	2	"	..	..	..	..	25/8.02
Mataura, Mataura	Coster, W. ..	26	"	1	16′	all	..	"	..	..	..	"	5,776	..	5,776	28,002	33,778	5	..	5	"	..	..	..	..	25/8/02
Townshend's, Mataura ..	Coomer, R. T. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	739	739	..	..	..	..	..	..	..	..	..
Duthie's, Waimumu ..	Williams, W. J...	3	lignite	1	..	..	..	open	..	..	..	open	2,358	..	2,358	927	3,285	6	..	6	..	..	..	..	..	26/8/02
Ota Creek, Wyndham ..	Shields, W. ..	22	"	1	6′	all	..	"	..	..	..	"	800	..	800	10,096	10,896	2	..	2	..	..	..	..	..	..
Robin Hood, Pine Bush ..	Trotter, R. A. ..	21	"	1	15′	"	..	"	..	..	..	"	85	..	85	1,509	1,594	1	..	1	..	..	..	..	..	..
Graham's, Fairfax	Graham, P. S. ..	24	"	1	5′ 6″	"	1 in 20	bord and pillar	..	..	6 ch.	adit	485	..	485	13,421	13,906	..	2	2	hand	..	..	..	natural	..
Spey Bank, Fairfax ..	Salton, R. ..	9	"	1	5′	"	..	ditto	..	..	..	"	..	..	..	540	540	..	..	..	"	..	..	..	"	..
Isla Bank, Fairfax	Slattery, M. ..	22	"	1	6′	"	..	open	..	..	..	open	414	..	414	5,477	5,891	2	..	2	"	..	..	..	..	..
Nightcaps, Nightcaps ..	Lloyd, J. ..	21	brown	3	36′ in the aggregate	24′ in aggregate	variable	bord and pillar	3	4′ x 4′ 4′ x 4′ 6″ 5′ x 5′	32 ch.	adit	39,934	..	39,934	298,563	338,497	20	44	64	steam and horse	..	..	..	Hayes fan	30/10/02
H.B., Nightcaps	Kelly, T. ..	4	"	1	6′ 6″	..	..	ditto	..	..	..	"	1,597	..	1,597	1,393	2,990	..	3	3	hand	..	..	..	natural	29/10/02
Hit or Miss, Nightcaps ..	Alley and Tinker	2	"	1	..	..	..	..	..	..	..	..	221	..	221	354	575	2	..	2	"	..	..	..	"	21/10/02
Blythe, Nightcaps	Greer and Spence	3	"	..	..	..	..	open	..	..	..	open	225	..	225	784	1,009	2	..	2	"	..	..	..	..	30/10/02
Quested's, Nightcaps ..	Quested, J. ..	..	"	..	..	..	..	"	..	..	..	"	..	..	..	577	577	..	..	..	"	..	..	..	..	26/4/02
Brighton's, Nightcaps ..	Brighton, G. ..	3	"	..	..	..	..	"	..	..	..	"	186	..	186	170	356	2	..	2	"	..	..	..	..	26/4/02
McBride's, Wairio, Nightcaps	McBride, A. ..	2	"	..	..	..	..	"	..	..	..	"	130	..	130	3,864	3,994	1	..	1	"	..	..	..	..	26,4/02
Gillies's, Clifton	Gillies, T. ..	½	..	..	..	..	..	"	..	..	..	"	82	..	82	..	82	2	..	2	"	..	..	..	..	..
Orepuki, Orepuki	Love, A. ..	..	brown & oil-shale	..	..	..	..	..	..	..	..	adit	5,385	968	6,353	17,517	23,870	3	28	31	steam	..	..	..	Hayes fan	28/10/02
													2,338 (oil-shale)	..	2,338 (oil shale)	12,048	14,386	..	..	..	..	..	..	..	..	..
Pits worked for Private Use.																										
Milne's, Pukerau	Milne, Jas. ..	1	lignite	1	7′	all	..	open	..	..	..	open	15	..	15	..	15	..	..	..	..	..	..	..	..	3/5/02
Waikoikoi, Pukerau ..	Kirk, W. ..	15	"	1	6′	"	..	"	..	..	..	"	20	..	20	290	310	..	..	..	..	..	..	..	..	..
Mason's, Pukerau	Mason, A. ..	1	"	1	7′	"	..	"	..	..	..	"	10	..	10	..	10	..	..	..	..	..	..	..	..	3/5/02
Robert Smith's, Pukerau ..	Smith, R. ..	1	"	1	14′	"	..	"	..	..	..	"	20	..	20	..	20	..	..	..	..	..	..	..	..	3/5/02
H. Smith's, Pukerau ..	Smith, H. ..	1	"	1	7′	"	..	"	..	..	..	"	20	..	20	..	20	..	..	..	..	..	..	..	..	3/50/2
McDonald's, East Gore ..	McDonald, G. H.	1	"	1	7′	"	..	"	..	..	..	"	56	..	56	..	56	..	..	..	..	..	..	..	..	1/5/02
Leitze's, East Gore ..	Leitze, M. ..	23	"	1	4′ to 7′	"	..	"	..	..	..	"	12	..	12	1,440	1,452	..	..	..	..	..	..	..	..	..

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Statistics of Workings in Coal-mines, 1902—*continued*.

Name of Mine and Locality.	Name of Manager.	Number of Years worked.	Quality of Coal.	No. of Seams worked.	Thickness of Seams.	Thickness worked.	Dip of Seam.	System of Underground Working.	Number of Shafts.	Dimensions of Shafts.		Output delivered by	Output for 1902.			Approximate Total Output to 31st December, 1901.	Approximate Total Output to 31st December, 1902.	Number of Men ordinarily employed.			Power used for drawing Mineral.	Pumps.			Means of Ventilation.	Date of Inspector's Last Visit
										Size of Shaft or Adit.	Depth of Shaft or Length of Adit.		Coal.	Slack.	Total.			Above.	Below.	Total.		Stroke.	Size of Barrel.	Height of Column.		
MIDDLE ISLAND—*continued*.																										
Southland—*continued*.													Tons.	Tons.	Tons.	Tons.	Tons.									
Private Pits—continued.																										
River View, Gore	Nicol, L. D. ..	11	lignite	..	..	..	..	open	..	..	..	open	15	..	15	864	879	..	..	..	..	..	..	..	..	..
Healy's, East Gore ..	Healy, P. ..	1	"	1	..	all	..	"	..	..	..	"	12	..	12	..	12	..	..	..	..	..	..	..	..	1/5/02
Ford's, Chatton	Ford, P. ..	22	"	..	..	..	..	..	..	..	..	..	19	..	19	430	449	..	..	..	..	..	..	..	..	..
Otama, Otama	Graham, T. ..	9	"	1	..	all	..	open	..	..	..	open	20	..	20	275	295	..	..	..	..	..	..	..	..	30/8/02
Cross's, Otama	Cross Bros. ..	..	"	1	..	"	..	"	..	..	..	"	32	..	32	84	116	..	..	..	..	..	..	..	..	30/8/02
McGilvray's, Mataura ..	McGilvray, J. ..	12	"	1	4′	"	..	"	..	..	..	"	20	..	20	313	333	..	..	..	..	..	..	..	..	27/8/02
Bushbridge's, Wendon Valley	Bushbridge, P. ..	2	"	1	..	"	..	"	..	..	..	"	52	..	52	15	67	..	..	..	..	..	..	..	..	29/4/02
Perkins', Wendon Valley ..	Perkins, G. A. ..	1	"	1	..	"	..	"	..	..	..	"	23	..	23	..	23	..	..	..	..	..	..	..	..	..
Wyndham, Wyndham ..	Walker, James ..	7	"	1	..	"	..	"	..	..	..	"	20	..	20	267	287	..	..	..	..	..	..	..	..	..
Marshall's, Edendale ..	Marshall, H. ..	11	"	1	5′	"	..	"	..	..	..	"	30	..	30	545	575	..	..	..	..	..	..	..	..	..
Mount Linton, Nightcaps ..	Taylor, R. ..	12	brown	1	10″	8′	..	"	..	..	..	"	20	..	20	614	634	..	..	..	..	..	..	..	..	..
Marlow, Nightcaps ..	Kelly, J. W. ..	1	..	..	..	..	..	..	..	..	..	..	10	..	10	..	10	..	..	..	..	..	..	..	..	..
Pits not at work.																										
Glover's, Pukerau	Glover, A. ..	7	..	..	..	..	..	..	..	..	..	..	..	..	..	84	84	..	..	..	..	..	..	..	..	..
Waikoikoi, Pukerau ..	Scott & Ferguson	2	..	..	..	..	..	..	..	..	..	..	..	..	..	110	110	..	..	..	..	..	..	..	..	..
Radford's, Wendon ..	Radford, E. and P.	12	..	..	..	..	..	..	..	..	..	..	..	..	..	4,221	4,221	..	..	..	..	..	..	..	..	30/8/02
McBride's, No. 11, Nightcaps	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	72	72	..	..	..	..	..	..	..	..	..
Nichol's, Gore	Nichol, W. ..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	10	10	..	..	..	..	..	..	..	..	..
Smyth's, Gore	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7,107	7,107	..	..	..	..	..	..	..	..	..
Boyd & McNee (late Black's), Greenvale	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	478	478	..	..	..	..	..	..	..	..	..
Glendhu, Mataura.. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	347	347	..	..	..	..	..	..	..	..	..
Southbrook, Waikaka ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	117	117	..	..	..	..	..	..	..	..	..
Smith's, Mataura	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	55	55	..	..	..	..	..	..	..	..	..
Edendale, Wyndham ..	McDonald, A. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,997	1,997	..	..	..	..	..	..	..	..	..
Neill's, Edendale	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	79	79	..	..	..	..	..	..	..	..	..
Valley Road, Pukerau ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3,052	3,052	..	..	..	..	..	..	..	..	..
Moffet & Longshaw's, Waikaia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	72	72	..	..	..	..	..	..	..	..	..
Town's, Mataura	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8,002	8,002	..	..	..	..	..	..	..	..	..
Carr's, Mataura	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	518	518	..	..	..	..	..	..	..	..	..
Porter's, Pukerau	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	22	22	..	..	..	..	..	..	..	..	..
Dickson and Walker, Croydon	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	37	37	..	..	..	..	..	..	..	..	..
Hokonui, Hokonui ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	52,084	52,084	..	..	..	..	..	..	..	..	..
Slaughter-yards, Mataura ..	(Freezing-works use)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	83	83	..	..	..	..	..	..	..	..	..
Perseverance, Pukerau ..	..	..	..	..	..	..	..	open	..	..	..	open	..	..	..	2,052	2,052	..	..	..	..	..	..	..	..	..
Frank's, Pukerau	..	..	..	..	..	..	..	"	..	..	..	"	..	..	..	45	45	..	..	..	..	..	..	..	..	..
Rejefsky's, Gore	..	..	..	..	..	..	..	"	..	..	..	"	..	..	..	57	57	..	..	..	..	..	..	..	..	..
Clukoski's, Gore	..	..	..	..	..	..	..	"	..	..	..	"	..	..	..	28	28	..	..	..	..	..	..	..	..	..
Kirk and Sheddon, Gore ..	..	..	..	..	..	..	..	"	..	..	..	"	..	..	..	140	140	..	..	..	..	..	..	..	..	..
Fryer's Excelsior, Gore ..	..	..	..	..	..	..	..	"	..	..	..	"	..	..	..	807	807	..	..	..	..	..	..	..	..	..

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Dryden's, Gore	..	..	..	..	..	..	..	..	..	"	..	..	..	"	..	..	..	438	438	..	..	..	..	..	..	..	..	..	..	..	..
Kingdon's, Gore	..	..	..	..	..	..	..	..	..	"	..	..	..	"	..	..	..	27	27	..	..	..	..	..	..	..	..	..	..	..	..
Westbrook, Greenvale	..	..	..	..	..	..	..	..	..	"	..	..	..	"	..	..	..	175	175	..	..	..	..	..	..	..	..	..	..	..	..
Middlemiss, Greenvale	..	..	..	..	..	..	..	..	..	"	..	..	..	"	..	..	..	15	15	..	..	..	..	..	..	..	..	..	..	..	..
Marshall's, Otama	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	48	48	..	..	..	..	..	..	..	..	..	..	..	..
Maslin's, Wendon	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	854	854	..	..	..	..	..	..	..	..	..	..	..	..
Vial's Perseverance, Waikaia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	681	681	..	..	..	..	..	..	..	..	..	..	..	..
Cambrian (McIvor), Waikaia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	191	191	..	..	..	..	..	..	..	..	..	..	..	..
Northcote's, Waikaia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	685	685	..	..	..	..	..	..	..	..	..	..	..	..
McGowan's, Mataura	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	125	125	..	..	..	..	..	..	..	..	..	..	..	..
Genge's, Wyndham	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,819	2,819	..	..	..	..	..	..	..	..	..	..	..	..
Monaghan's, Pine Bush	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	11	11	..	..	..	..	..	..	..	..	..	..	..	..
Morley Village (Brazer's)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,000	2,000	..	..	..	..	..	..	..	..	..	..	..	..
Cluny, Orepuki	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	150	150	..	..	..	..	..	..	..	..	..	..	..	..
Waikaka, Gore	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	604	604	..	..	..	..	..	..	..	..	..	..	..	..
Croydon, Gore	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	25	25	..	..	..	..	..	..	..	..	..	..	..	..
Hunter's, Otama	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,944	1,944	..	..	..	..	..	..	..	..	..	..	..	..
North Chatton, Waikaka	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	672	672	..	..	..	..	..	..	..	..	..	..	..	..
Edge's No. 14, Wendon Valley	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,280	1,280	..	..	..	..	..	..	..	..	..	..	..	..
Munro's, Wyndham	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	11,151	11,151	..	..	..	..	..	..	..	..	..	..	..	..
Wallace, Nightcaps	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	20,147	20,147	..	..	..	..	..	..	..	..	..	..	..	..
Alley's Reliable, Nightcaps	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	704	704	..	..	..	..	..	..	..	..	..	..	..	..
Black Diamond, Nightcaps	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	220	220	..	..	..	..	..	..	..	..	..	..	..	..
Morley Village, Nightcaps	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	301	301	..	..	..	..	..	..	..	..	..	..	..	..
Jones, Edendale	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	280	280	..	..	..	..	..	..	..	..	..	..	..	..
Totals, Middle Island	..	..	..	..	..	..	..	..	..	..	..	..	..	..	975,141	197,854	117299	12514516	13687511	726	1786	2512									
Totals, North Island	..	..	..	..	..	..	..	..	..	..	..	..	..	..	187,241	4,804	192045	2088675	3130720	77	296	373									
Grand Totals	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1162382	202,658	1365040	15458191	16818231	803	2082	2885									

Add output of following twelve mines, included in previous statement but now abandoned: Motupipi, 360 tons; Westport-Wallsend, 3,441 tons; Waimangaroa, 17,307 tons; Wellington, 2,299 tons; Inkerman, 2,665 tons; Inglewood, 314 tons; Devil's Creek, 843 tons; Inangahua, 71 tons; Murray's Creek No. 2, 450 tons; Burke's Creek, 300 tons; Reefton, 36 tons: total	.. ..	27,580
Add output of Waikaka, Adam's Flat, and Waimea Mines, inserted twice in statement for 1891	.. ..	6,518
Output of mines included in statement for 1890, but whose operations were suspended prior to 1890, less three, which are again included in body of statement—namely, Hill's Creek, 779 tons; Lovell's Flat, 323 tons; and Wyndham, 1,988 tons: total, 3,090 tons	.. ..	132,732
Output of mines included in former statements, but whose operations were suspended prior to 1889	.. ..	174,520
		17,157,696

JOHN HAYES, Inspecting Engineer.

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1903.

NEW ZEALAND.

STATE COAL-MINES

(REPORT ON THE WORKING OF) FOR THE YEAR ENDING THE 31ST MARCH, 1903.

Presented to both Houses of the General Assembly in accordance with the requirements of Section 14 of "The State Coal-mines Act, 1901."

POINT ELIZABETH COAL-MINE.

Mr. A. B. LINDOP, Manager of State Coal-mines, to the UNDER-SECRETARY OF MINES, Wellington.

SIR,— Greymouth, 20th June, 1903.

I have the honour to submit my annual report on the State Coal-mines at Seven-mile Creek, Point Elizabeth, for the year ending the 31st March last.

The coalfield may be taken as two distinct sections—namely, the northern section, which lies to the north of the Seven-mile Creek, and the southern section, which lies between Coal Creek and Seven-mile Creek.

Most of the development-work done has been over the southern section This will be worked from three distinct openings, owing to two large faults crossing the field, which have caused a displacement of the coal on the western side of the fault of fully 100ft. in each case. These openings are made by tunnels driven in from the western face of the range, to cut the coal to the dip of the seams showing in outcrop on higher spurs, and will in each case enable a large area of coal to be won level-free.

No. 1, or the most southern tunnel, has to be driven a distance of 693 ft. to reach the coal. This distance has been accurately ascertained by a shaft which was sunk some years ago on the upper side of the most eastern of the fault-lines before referred to. A borehole was put down from the bottom of this shaft, which went through 16 ft. of an excellent quality of coal. The tunnel at the end of March last was constructed for a distance of 408 ft., leaving 285 ft. yet to be driven to cut the coal. This distance will be driven by the end of June, when a commencement will be made to open up headings in the coal, and an opening will be made to the surface for the purpose of procuring good ventilation. The headings require to be driven for a considerable distance into the coal before any large output can be expected. These works will be energetically carried on, and will be well advanced by the time the railway is completed.

No. 2 tunnel is estimated to be 594 ft. in length before it will reach the coal, but this distance is not definitely fixed, as it depends to a certain measure on the dip or inclination the coal is lying at. It is, however, approximately correct, as far as can be ascertained from surface indications, and the inclination of the strata and coal-seam shown in the Exhibition outcrop. The range rises abruptly, and would necessitate about 600 ft. of a bore to test the coal-seam at the point where the tunnel is expected to cut it. It was not considered desirable to incur the expense of putting down a bore after ascertaining the inclination of the seam at the Exhibition outcrop, which shows there to be 14 ft. of excellent coal, and this seam will be worked from this tunnel. At the end of March last the tunnel was driven a distance of 304 ft., leaving something like 300 ft. to drive to cut the coal-seam.

No. 3 tunnel: This opens up as much of the western portion of the field as can be worked level-free. Any coals to the southward of the tunnels will have to be worked from shafts, and with the exception of a borehole, which was put down in the bottom of a gully near Camp Creek, between Nos. 1 and 2 tunnels, nothing is known of this portion of the field. The borehole in this gully is down to a depth of 381 ft., and went through, it is said, about 8 ft. 4 in. of good coal. It is estimated that the No. 3 tunnel will have to be driven a distance of 528 ft. to cut the coal, but this distance is not definitely ascertained, as the great depth of borehole required to test the coal at this point would entail an expenditure not warranted, having other information available. This means that the tunnel may be required to be driven some distance further than estimated, but it will depend upon whether any slight alteration has occurred in the angle of the dip from that shown at the coal-outcrops.

These three tunnels have been driven continuously by three shifts.

No. 4 tunnel: This is to open up the section on the northern side of the Seven-mile Creek, where there are several outcrops of hard coal highly suitable as fuel for steam purposes exposed. Before this portion of the field can be worked a bridge will have to be constructed across the Seven-mile Creek, and a tramway connection made between the tunnel and the site of coal-bins. As it only requires a short drive of 2½ chains to reach the coal-seam, one shift has been employed on this work.

The northern section of the mine is likely to form a large coal-bearing area, but as there has been very little prospecting-work done to prove the thickness of the coal-seams, and determine the number of faults and amount of displacement, there has been very little detailed information acquired respecting it, beyond the fact that numerous outcrops of coal are to be seen alongside the Seven-mile Creek and at the Nine-mile Bluff. At the latter place Mr. John Kane opened out about twelve months ago a seam of coal in the terrace fronting the sea-beach. This seam was of good quality and 6 ft. in thickness.

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The outcrops appearing along the Seven-mile Creek at different horizons, and the general strike of the coal-measures being all to the westward, show that there will be several faults to contend with, but very little is at present known as to the amount of displacement or the lines of fault in this section. One thing, however, is clear, that the coal-measures extend over a large area, and that more than one seam of coal exists.

The Nos. 1, 2, and 3 tunnels will enable a very large area of coal to be won above water-level, and whilst the southern area is being worked, ample time will be given to systematically prospect the northern section.

On taking charge of this mine on the 15th November last, the first thing that had to be determined was the site for coal-bins that would be convenient to both the northern and southern sections of the property. This question had been previously considered by Mr. John Hayes, the Inspecting Engineer of the Mines Department, and his reports and recommendations were handed to Mr. H. A. Gordon, the Consulting Engineer, and myself to fully examine and report as to what we considered the most suitable site for the requirements of the field.

After carefully examining the methods proposed by Mr. Hayes of bringing the coal from the different openings of the mine, and the estimated cost, we could not indorse the recommendation then made, which was to have the coal-bins at or near the four-mile peg on railway-line, and bring the coal to that point by endless-rope-haulage system. We deemed it more desirable to extend the line of railway about 60 chains, and have the coal-bins as close to the present openings into the mine as possible, so as to reduce the cost in working-expenses on a short length of rope haulage. Another reason was that the railway can be extended from this point up Seven-mile Creek at some future period, if deemed necessary, to work what is known as "Moody's series" of coal-seams, some two miles further up the Seven-mile from the site of the proposed bins. This site is central, and commands the working of both sections of the coalfield.

After deciding the site for the bins, a survey was made for an endless-rope-haulage road to command Nos. 1 and 2 tunnels as well as the bins, and possibly this haulage system may connect with No. 3 tunnel, which is only a short distance from the bins, but this will not be decided until the survey of the haulage-road from No. 4 tunnel on the northern section is completed, when it is possible that they may be all worked from the one haulage system. The surveys of the haulage-road can not be undertaken until the Public Works Department has completed the survey of the railway and decided as to the best site for a station-yard. The whole of the works are now in hand, and will be completed by the time the railway and station-yard are constructed.

As there is a large quantity of good milling-timber on the ground, it is proposed to erect a small sawmill to cut all the timber for the construction of the bins and buildings and other timber required for mining. A site for this has been decided upon, and ground prepared for erecting the mill.

As the works are now well in progress, the routes of the tramway-line and railway decided upon, and a arge number of men employed, it is desirable that a township should be laid off. At the present time the men employed are squatting about at the upper end of Camp Creek.

Estimates of the costs of opening out and equipping the mine have been carefully gone into by the Consulting Engineer and myself. These have already been forwarded to you, in order that the ropes, rails, &c., may be procured from England in time for completing the haulage-roads.

Tenders were called for the supply of 750 mine-tubs, to be made and galvanised in the colony, and a contract has been entered into with Messrs. Griffiths and Co., of Birchfield.

In concluding my first annual report on Point Elizabeth State coal-mine, I would mention that the development-work is being pushed forward with all diligence consistent with economy. It will entirely depend upon the completion of the railway-line as to when a certain quantity of coal may be sent to port of shipment, and it will take at least twelve months before any large output can be expected, as headings will have to be driven a considerable distance from each opening before bords can be opened out to work the mine in a systematic manner.

I have, &c.,

ALFRED B. LINDOP, Manager.

The Under-Secretary, Mines Department, Wellington.

SEDDONVILLE COAL-MINE.

Mr. A. B. LINDOP, Manager of the State Coal-mines, to the UNDER-SECRETARY OF THE MINES DEPARTMENT, Wellington.

SIR,— Greymouth, 15th June, 1903.

I have the honour to submit my annual report on the State coal-mine at Seddonville for the year ending the 31st March last.

This property was originally worked by the Westport-Cardiff Company, but the mine portion of the property opened out by this company took fire and still continues to burn. The ground has fallen in places, and the surface is so full of holes and rents that it is almost impossible now to exclude the air from the burning seam. Even were it possible to do so, no coal could be got from the area on fire.

The portion of the property now being opened up as a State coal-mine is known as the "Cave Area," and is completely isolated from the burning area by a large fault which can be traced between Chasm Creek and Coal Creek. On the upper side of this fault there are several outcrops along the side of the terrace fronting Chasm Creek, and extending for a considerable distance up the stream. The highest outcrop is known as "Grant's Face," where the coal is 21 ft. in thickness and of excellent quality. A small drive has been put into the coal from this face for a distance of 15 chains. In several places in this drive the coal is of a softer character than at the outcrop, but in other places the coal is of a harder nature more like that at the outcrop. There is a considerable area here containing coal, but until the mine is properly opened up the extent and quality cannot be definitely stated.

On one side of the Cave Area there is a belt of granitoid rock, through which a tunnel has to be driven for a distance of 24½ chains to cut the coal. This tunnel at the end of March last was

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driven 14½ chains, leaving 10 chains yet to be driven before the coal is met with. The place where it strikes the coal will admit of a considerable area of coal being worked whilst the main and back headings are being extended towards Grant's Face. The small drive from Grant's Face is driven on the line of the back heading, so that when the face of this drive is reached very little work will be required to widen the drive to Grant's Face as a back heading for ventilation.

Several boreholes have been put down through the coal-measures on the line of the main tunnel, one of which had a depth of 200 ft., of which 14 ft. was in coal.

A shaft for ventilating purposes is in course of construction on the line of the back heading, at a distance of 22 chains along the course of the tunnel from its mouth. When this shaft is completed a crosscut will be driven to the line of the main tunnel, and it can be driven from two faces, thus expediting the driving of the tunnels, and we may expect the main heading to reach the coal about the end of July. A ventilating-fan will be required at the shaft before the heading in the coal is far advanced, but provision is arranged for this.

An endless-rope-haulage road is in course of construction from the mouth of the main tunnel to the coal-bins on Seddonville Flat, a distance of 87 chains. This road was laid out and a portion of it constructed prior to my taking charge of the works. The line at the change or alteration of grades had, however, to be altered before the tubs would run satisfactorily. This has to some extent delayed its completion, and at the present time there is a shortage of rails to complete the road on the incline, but arrangements have been made to get a sufficient quantity of second-hand rails from the Railway Department.

The coal-bins and staging formerly erected by the Cardiff Company are now in an advanced state of decay, all the beams and most of the planking require to be renewed. Timber is now being cut for this purpose, and the renewals and alterations are being proceeded with.

The former railway-siding to the coal-bins has been greatly damaged by flood-water from the Mokihinui River. This has necessitated the construction of a water-channel alongside the siding for a distance of about three chains, and the making of an opening across the line and the construction of a bridge to provide for taking away the flood-water. A loop-line has also been surveyed from the railway-line beyond the Seddonville Railway-station to the coal-bins, as the railway accommodation previously arranged was inadequate to deal with any large output of coal from the mine. This loop-line will allow the empty wagons to be shunted in at the back of the bins, and lowered down on the siding towards the main railway as they are loaded. A commencement has been made towards clearing the bush and forming the line. The length of this loop-line is 24 chains.

The steam-engine and hauling-gear are in good order, but a considerable quantity of filling had to be done at the back of the engine-house to get a suitable place to erect tension-wheels for the haulage-rope. A commencement has been made with this work.

The blacksmith's shop requires to be raised a few feet to keep the floor above flood-level. Piles have been fixed so that this can be done, and the floor of the shop filled in. It is not intended to disarrange the forges, benches, and machines until such times as the principal blacksmithing-work is done.

I conclude my first annual report on the Seddonville State Coal-mine, with the assurance that the works are being pushed rapidly ahead. I hope that by the end of September we shall be able to send out a small quantity of coal, which will be gradually increased as the headings are driven and the mine opened out.

I have, &c.,

ALFRED B. LINDOP, Manager.

The Under-Secretary, Mines Department, Wellington.

BALANCE-SHEET, together with STATEMENT OF ACCOUNTS, showing with respect to each Coal-mine worked by the Minister of Mines, under "The State Coal-mines Act, 1901," the Financial Position and Financial Result of its Operations for the Year ended the 31st March, 1903.

Liabilities.

	£ s. d.	£ s. d.
3½ per cent. Debenture Loan, under section 10 of "The State Coal-mines Act, 1901," redeemable 1st April, 1907	150,000 0 0	
Less debentures unissued	98,000 0 0	
		52,000 0 0
Consolidated Fund (interest advanced)		371 11 6
Accrued interest payable 1st April, 1903		605 4 1
		£52,976 15 7

Assets.

—	Seddonville Coal-mine.	Point Elizabeth Coal-mine.	Total.
	£ s. d.	£ s. d.	£ s. d.
Seddonville Colliery (cost)	7,497 9 9	..	7,497 9 9
Point Elizabeth Colliery (cost)	..	4,024 12 3	4,024 12 3
Greymouth and Point Elizabeth Railway (cost)—			
Purchase	..	21,000 0 0	..
Completing and equipping (cost)	..	6,901 8 0	27,901 8 0
	£7,497 9 9	£31,926 0 3	39,423 10 0
	£ s. d.		
Cash at Bank	1,076 10 0		
Cash in hands of Impresstee	1,500 0 0		
Agent-General	10,000 0 0		
			12,576 10 0
Balance (Interest Account)			976 15 7
			£52,976 15 7

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BALANCE-SHEET, together with STATEMENT OF ACCOUNTS—*continued.*

Receipts.

	£ s. d.
To Loans Account Debentures issued under "The State Coal-mines Act, 1901"	52,000 0 0
	£52,000 0 0

Expenditure.

Nature of Transactions.	On Capital or Profit and Loss Account.	Seddonville Coal-mine.	Point Elizabeth Coal-mine.	Total.
		£ s. d.	£ s. d.	£ s. d.
Salaries, general management	Capital ..	66 2 2	132 4 6	198 6 8
Wages	" ..	6,274 14 2	..	..
Supplies	" ..	1,069 6 9	..	..
Freight	" ..	41 6 6	..	..
Travelling-expenses, &c.	" ..	26 0 2	..	..
		..	..	7,431 7 7
Wages	" ..	..	1,942 15 1	..
Supplies	" ..	..	651 18 4	..
Cartage and freight	" ..	..	37 15 0	..
Travelling-expenses	" ..	..	155 12 11	..
Purchase timber rights	" ..	..	500 0 0	..
Tramway construction	" ..	..	140 0 0	..
Fee, consulting engineer	" ..	..	52 10 0	..
Legal expenses	" ..	..	26 11 4	..
Special examinations, selection of site	" ..	..	329 10 3	..
Premium, fidelity bond	" ..	..	12 10 0	..
House-allowance	" ..	..	18 17 9	..
Telephone subscriptions	" ..	..	24 7 1	..
On Greymouth–Point Elizabeth Railway—				3,892 7 9
Purchase of railway	" ..	..	21,000 0 0	
Wages	" ..	..	5,151 15 9	
Supplies	" ..	..	1,313 7 4	
Freight	" ..	..	395 9 5	
Travelling-allowance	" ..	..	30 6 2	
Instrument allowance	" ..	..	10 9 4	
				27,901 8 0
		£7,497 9 9	£31,926 0 3	£39,423 10 0

	£ s. d.	
Balance unexpended—		
Cash in hand—at Bank	1,076 10 0	
Cash in hands of Impresteo	1,500 0 0	
" Agent-General	10,000 0 0	
		12,576 10 0
Total		£52,000 0 0

Credits and Liabilities.

	£ s. d.
Liability for interest advanced by Consolidated Fund	371 11 6
" accrued to 1st April	605 4 1
	£976 15 7

ROBERT, J. COLLINS,
Assistant Secretary to the Treasury.

H. J. H. ELIOTT,
Under-Secretary of Mines.

Submitted to the Audit Office for audit in conformity with the provisions of section 4 of "The State Coal-mines Act, 1901."

JAS. McGOWAN,
Minister of Mines.

Examined and found correct.—J. K. WARBURTON, Controller and Auditor-General.

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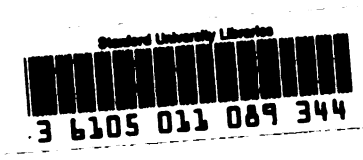

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